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GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

SENATOR BLAIR'S NEW BILL.

BY PROF. O. E. OLIN.

ACCORDING to newspaper report, Senator Blair seems almost ready to break away from the traditional limits that have been placed upon government. His latest bill makes provision for what seems a very practical Government Labor Bureau. Departments of this Bureau are to be established in every State and Territory for the purpose of aiding both laborers and employers. Each station shall gather from its territory all needful facts concerning number of laborers, condition of trade, cost of living, etc., and become a bureau of information for all persons in need of employment, occupation, relief, or homes. The Senator evidently believes that "if any provide not for his own, and specially for those of his own house, he has denied the faith," for the bill provides that all money paid by the Government as wages shall be paid to citizens of the United States, or those who have declared their intention to become such.

While it is not probable that the present Congress, with its slow methods, will be able to touch the bill this winter, doubtless the minds of many people will be directed toward it.

In the present unfortunate condition of the farming and laboring communities, and especially in view of any proposed remedies, it is needful that we know the exact facts concerning our industrial condition. In spite of our wide-spread facilities for gathering statistics, we now have no systematic way for making this practicable knowledge available to those most directly interested. Such scattered stations, with a central department, could soon give such an insight into our complex industrial life that intelligent theories could be formed, and remedies for existing ills could be applied, with almost mathematical certainty. To our philosophers, reformers, and legislators, such knowledge would be well worth two years of the life of such a bureau, while it is easy to see how individual hardships might be averted, congested labor centers relieved, and whole classes benefited by easy access to reliable and specific information.

In the face of an army of the unemployed, it is common to hear men say that any one who wants work can get it. But do they know anything about it? The experience of honest men who have tried and failed tells a different story. The experiment tried by a prominent clergyman in so large a city as Topeka, throws some light upon the subject. It is unwise and unjust to form conclusions and advocate changes, with only half knowledge. The well-being of the laborer, and the promptness with which the world's work is done, have direct bearing upon the welfare of organized society, and society can very properly be asked to bear part of the burdens in the matter, without violating the most conservative man's idea of government. Moreover, the questions of labor and capital are so momentous, and must be handled so wisely and so soon, that anything that promises to fit us better for handling them should be given a trial. Let the bill pass.

SCALE INSECTS AND THEIR DESTRUCTION.

BY PROF. E. A. POPENOE.

IN several localities lately visited by the writer, complaint has been made of the damage done to shade or fruit trees by scale-lice. In one locality, a favorite seedling of the Chickasaw plum was affected; in another, the soft maple; and in a third, a species of willow, the insects apparently of three distinct species in the three cases. However this may prove, the procedure for the relief of the trees varies little in the three. It should first be understood that most scale-lice are absolutely stationary in their perfect stage, and their distribution over

the tree and to the new growth from one season to another is secured by the activity of the newly hatched young. These are soft-bodied and unprotected except by their minuteness; but after reaching the place where they settle for life, there is begun the growth of a scale which soon protects the insect from ordinary methods of attack. The best time to attempt the destruction of scale-lice, then, is just after they are hatched, and while they are spreading over the tree, during a period often lasting but a few hours. At this particular time, the application of a kerosene spray to the branches of the trees affected will do much to destroy the fecund pest. Where the insects occur on the bark of the trunk and larger branches, the use of a wash of whale-oil soap-suds, or even strong suds from common soap, applied with a stiff brush, will kill many of them, and careful and repeated applications will insure complete success.

NOTE ON THE BEAN WEEVIL.

BY PROF. E. A. POPENOE.

THE bean weevil has proved very troublesome here the season just closed, and an examination of our stock of beans, of about eighty sorts, shows a destruction of the product varying in amount according to the sort from two to sixty per cent, the Broad Windsor and the Limas alone being exempt from attack.

To those who are familiar with the work of the pea weevil, the fact may be of interest that the bean weevil, unlike its relative, does not limit its attack to a single one for each seed, but instead, places in each bean several eggs, so that the full-grown larvae, hatching from these, are often literally crowded together in the bean, which is their common home and food. This crowding often results in the entire destruction of the seed except the outer skin, which remains unbroken, thus often totally misleading the observer who notes no external indication of the injury except a few very minute scattered white punctures where the insect first entered the bean. In the Dutch Case-Knife bean, the larvae were abundant, a single seed containing, by actual count in one instance, as many as twenty-eight, while in other varieties, as, for example, in the Large Yellow Six Weeks and in the Date Wax, the actual number per bean was only less because the beans were too small to contain so many. Where the early matured product of several varieties of beans was prepared for exhibition at a fair, early in September, and the bottles, stopped with loose corks, were left uncared for until the date of this note, there seems to be evidence that the beetles continue to breed and develop in dry beans, as in numerous cases we find beans with larvae of all sizes pupae, and adult weevils, as well as the empty cells whence adults have escaped earlier. This observation points to the desirability of the early treatment of seed beans for the destruction of the weevils instead of waiting until planting time in spring, as is often done. A simple means of killing the weevils is found in exposing the infested seed, in a tight box or jar, to the vapor of carbon bisulphide for several hours, or longer if convenient.

THE "EMERGENCY" CONFERENCE.

BY PROF. O. E. OLIN.

THE railroad conference that meets in Topeka today has the opportunity to remove much prejudice, and to show whether the railroads are willing to consider their community of interests with the farmers. The Board of Railroad Commissioners, the officers of the leading railroads, and the representatives of the farmer's organizations in the State, if they use judgment and fair-

ness, can surely reach a conclusion on the "emergency rate" that will satisfy all concerned.

At the present low price of corn, and the urgent necessities of the farmer, the need is self evident. I doubt, however, that it will do the great amount of good expected; still it must do much. But back of the emergency of the day, is the question of years; whether the railroad, having built up, or assisted in building up, communities that it might do their carrying trade, has any further duties toward them; whether the rates shall be the same, no matter what unusual conditions arise; whether the farmer, in times of prosperity, shall make liberal division of his profits, but in times of adversity shall bear all the loss himself.

It would seem that, in the case of grains that must necessarily find their market in distant trade centers, an ad valorem or per centage tariff, within certain limits, might come nearer a just division than the present inflexible rate. The question, however, is not easy to settle. There are many apparently conflicting conditions, and the interstate commerce act must have its bearing; but the recognition of a community of interests in the matter, and, consequently, a community of responsibilities, is the first step to a rational solution of the problem.

It is but the failure to recognize this mutual dependence, and the duty growing out of it, that makes men believe in the nationalization of industries, and that gives point or force to Bellamy's troubled dream.

WASTE IN FARMING.

We shall see speculative farming die out. Small farming and thorough tillage, with permanent homes and rational economy, will banish mortgages. The earth is full of uncoined wealth. It is our best banker, our best mortgagee.

It is a far-fetched conclusion that any such cause as protective tariff underlies the hardships of farmers. Nor is it in any sense true that "farm decadence" has set in. The evils I have noted are slowly being remedied. Huge farms are being subdivided and brought into such size as average wits can cover. Multiple crops are taking the place of a single crop, or two or three staples. I believe the farming of the future will be prosperous beyond all comparison with the past. We shall have a race of agriculturists well educated, enlightened, in love with earth and Nature, able to reap esthetically as well as materially, and snapping their fingers at mortgages. But we are only on the road. The one word we need to dread is waste—waste in crops, waste in tools, waste in weeds, waste in ignorant culture, waste in loafing, waste in drinking, waste in food, waste in over-work, waste in not providing for the mind as well as the body.

We are going through the great "off clearing" between the age when farmers lived narrow, remote lives, with few desires that they could not themselves supply by their own handiwork, and are well on our way into the age when each small farmer can cheaply dispense with the production of one-half his supplies, and be sure to have a surplus of the half he does raise, with which to purchase what he does not create. We no longer make our own soap, candles, cloth, yeast, carpets; but we raise a dozen crops where we formerly raised three or four. Of the old staples, not only is the quality improved, but the quantity increased to the acre. I should find it hard to discover of an average year a field of corn with so poor a stand as an average field of my father's day. The tools were so much poorer, and the drainage so inferior, that if we could get accurate farm reports of those days we should find our average yield far greater at present. The same is true of our fruits; in quality and quantity, we can grow more with intelligent culture. But we have to give up and get fewer by the "take-care-of-yourself" culture.

Farming, above all things, requires brains; and this is understood. The better farm houses are increasing, in which we find libraries as well as kitchens, and microscopes as well as sausage stuffers. There is now no place where mind and body can both be so well cared for as on a small farm. More and more our literary classes are betaking themselves to country life and a combina-

tion of intellectual and physical work. The hue and the cry that the day of the small farmer is over is not warranted; it is only just beginning. But the lesson of the hour is less waste, rational economy, and a completer mastery of the art of using to the best advantage what we create.—*E. P. Powell, in The Independent.*

THE WESTERN FARMER.

The farmers are undoubtedly right in the growing conviction that they are sufferers from the commercial conditions now prevailing in the country. But there is one fact in the development of these conditions which has generally been overlooked, and yet has much to do with the present state of affairs. The western farmers have been large sharers of Government bounty. The fertile farms which cover the vast prairies of the Dakotas, Nebraska, Kansas, and other States were for the most part given to them. The young men who went out from among us a few years ago are now the possessors of quarter sections, which cost them nothing but to move on and begin to plow and sow. A generous Government gave them the plant, and all they had to do was the planting. The effect of this paternal bounty is increased agricultural production, until the country has more grain than it knows what to do with. Nobody ever heard the cry, "Uncle Sam is rich enough to give us all a factory," but the other cry which has turned into sentiment, winged with music, and floated over the land, has given the country more farms than is good for the farmers themselves. Their industry is suffering just as any industry suffers when it overdoes the market.

The stock-raising business has also been affected by a similar cause. The stock-raisers have been grazing their vast herds on public lands, or lands which did not belong to them. This was a bounty to the business: it saved most of the natural expenses, and the result has been an over-stimulated business. "We are raising more cattle than the country calls for," said a leading stock-raiser a few days since.

Again, the rapid development of the agricultural regions of the West has been greatly facilitated by the unprecedented railroad building. Here again public bounty has been a most important factor. The general Government, cities, counties, and communities have given large donations in lands and bonds. These bounties brought railroads, and the railroads brought the products of vast and fertile sections into markets. In fact, the public push has been so great that it accounts for much of the superabundance which now floods the West.—*The Advance.*

THE EXPOSITION A PROOF OF SUCCESS.

The Exposition gives sure proof that there is an upward movement in all nations and all history. Never has there been more than an eddy in the stream; it has been constantly growing broader, flowing through ever richer fields and beneath ever fairer skies.

At one end of a street of dwellings was a hole in a rock, representing the world's architecture as it once was; compare that with the Roman house, with the house in the time of Charlemagne, with the houses of today, the Art Building, the Palace of the Trocadero, the Eiffel Tower! Has there been progress in architecture? In the hall of agricultural implements, was a superb McCormick reaper; compare that with a sickle for harvesting grain! In the same hall was a steam-plow turning several furrows at once. Farmers formerly scratched the ground with a stick, and called it plowing! In the machinery building were the electric lights—indeed, the vast grounds were lighted by electricity; suppose the Exposition had been lighted by candles, if at all! In another department were models of steamers which cross the ocean in six days, and locomotives which fly from sixty to eighty miles an hour. Is there no progress between a mail-steamer and a row-boat? or between a man on horse-back and a train running a mile a minute? No upward movement in history? Where are the eyes of those who talk such nonsense? There were seen the implements of war, but, singularly, they are becoming so perfect that they are practically useless. War is being made impossible by the very forces used to make it terrible. No progress? Why, the excellence of weapons is gradually insuring peace!—*A. H. Bradford, in the Congregationalist.*

KANSAS THRIFT.

Argentine expended in new buildings, smelters, and improvements, \$750,000, of which the smelter company expended \$100,000.

According to the report of the Kansas State Dairy Association, out of the 117 creameries in Kansas, all are in successful operation except six.

The success of cotton crop in some of the southern counties encourages the farmers to try the crop more extensively this year. Cotton pays much better than corn or wheat, but it is not probable that it will ever be extensively raised except in a few counties.

A petition containing 10,000 signatures of Kansas citizens was presented to Congress by Hon. S. R. Peters, praying for substantial appropriations for a practical system of irrigation for the reclamation of the arid lands of Southwestern Kansas and Southeastern Colorado.

A farmer recently brought to this market a fifty-bushel load of alfalfa seed and received \$200 for it. To obtain the same amount of money, an Eastern Kansas farmer would have to deliver 2,000 bushels of corn, which means much hard work and no profit.—*Garden City Sentinel.*

State Treasurer Hamilton, who has returned from a trip throughout Southern Kansas, says that cattle throughout Kansas are in splendid condition. The winter has been an admirable one for cattle. He says, however, that the movement of live-stock to the markets is very light. Nearly everybody is holding on for better prices.

A SKUNK FARM.

One who travels much, with observant eyes, may find many curious ways of making money; but one of the most curious is a skunkery at Homer, Mich. There are five hundred of these little animals in an inclosure of which the surface is covered with cement and fitted with drain tiles, into which they go for short naps in summer and a long sleep in winter. Their furs are worth from four to eight dollars per pelt, and their flesh yields a great deal of oil for medicinal purposes. Their owner knows their habits, and is able to escape the danger of disagreeable experiences which prompt people generally to give them a wide berth. From some of the young ones, the sacs are removed which contain their one offensive and defensive weapon, and they become harmless and interesting pets. It costs little to keep them, and in winter, when they hibernate, almost nothing. The business is said to be quite profitable, and is likely to increase. Perhaps it will lead to good results in more ways than one; for if the skunks should all get penned up, the hens' nests would be safer.—*The Congregationalist.*

PORK FROM A BUSHEL OF CORN.

Under average conditions, 10 pounds of pork for each bushel of corn fed would be a good yield. At 4 cents per pound for hogs, this would give forty cents per bushel for corn. In an experiment, conducted by a farmer's club in Connecticut, thrifty shoats fed on clear corn meal, wet in pure water, gained 12.9 pounds for each bushel of corn fed. Another pen of the same lot, fed on corn and cob meal, wet in clear water, gained 15.11 pounds to each bushel of corn fed. A third pen of the same lot of hogs, fed on entire corn soaked in water, gained 10.38 pounds for every bushel of corn fed.

Corn, being so largely composed of starch or heat-forming elements, needs some supplementary food to furnish more muscle, bone, and nerve-forming material. Being concentrated, it also needs some bulky food to go with it. Succulent foods usually furnish what corn lacks, and correct its constipating effects. When fed in connection with these supplementary foods, a greater amount of gain can be secured from a bushel of corn than when fed alone.—*Prairie Farmer.*

INDUSTRIAL TRAINING.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have Farming, Gardening and Fruit-growing, Carpentry, Cabinet-making, Iron-work, Printing, or Telegraphy. Young women may take Sewing, Printing, Telegraphy, Floriculture, or Music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second year and the fall term of the third year, upon the farm, gardens, and orchards. Young women take their industrials for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen, laboratory, and dairy.

CALENDAR.

1889-90.

Fall Term—September 12th to December 20th.
 Winter Term—January 7th to March 28th.
 Spring Term—March 31st to June 11th.
 June 11th, Commencement.

1890-91.

Fall Term—September 11th to December 19th.

TO SCHOOL OFFICERS.

The College Loan Commissioner has funds to invest in school districts bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioners and the State Agricultural College. Address Jno. E. Hessian, Loan Commissioner, Manhattan, Kan.

LOCAL MATTERS.

The influenza is on the wane so far as our students are concerned.

Assistant Marlatt had a two-days' tussle with la grippe this week.

Prof. Olin lectured Thursday evening before the Dickinson County High School, at Chapman.

B. P. Scott, student this term, has left College and returned to his home in Junction City. It is his intention to study law.

Miss Anna Fairchild, who is taking a course of medical treatment in Topeka, spent Saturday and Sunday at home.

By contribution of students, the mirror in the young men's study has received its proper accompaniment in brush and comb.

Prof. Georgeson's family are comfortably settled in the farm residence, which has undergone some repairs in the past two weeks.

The Young Men's Christian Association meeting on Sunday afternoon was led by Rev. D. C. Milner of the Presbyterian Church.

An Associated Press dispatch from Washington announces the appointment of our Regent. Hon. Morgan Caraway, as Postmaster at Great Bend.

Prof. Kellerman is improving, but his condition is yet such that his physician orders a few more days of nursing before resuming College duties.

G. L. Melton, Second-year, was called to his home, Silver Dale, Cowley County, by a telegram announcing the serious illness of his father.

Assistant Bresce had a relapse from the grippe and kept his room with a sore throat for a day or two this week. He thinks he will be well again in a short time.

Mr. George Harman, editor of the *Republican* of Valley Falls, visited, this week, his cousins, Misses May and Lockhart Harman and Mr. J. B. Harman, all students.

Prof. Popeno was unable, on account of the influenza, to meet his classes on Monday, and is still too unwell to attend the Institute at Stockton. Mr. Mason takes his place in the programme of the Institute.

Hon. F. P. Baker, President of the Brush Electric Light and Power Company, of Topeka, has our thanks for recharging and putting in order our Pumpelly storage batteries, which were completely "run out."

The College received a visit on Monday from Mr. P. B. Woodworth, Assistant Professor of Physics at the Michigan Agricultural College. Prof. Woodworth was the guest of Mrs. Kedzie during his brief stay here, having for several years past been an inmate of the family of Prof. R. C. Kedzie at Lansing.

The seventh and last division of the Third-year Class entertained the Chapel audience Friday afternoon with declamations. The speakers were Misses Bertha Winchip, Callie Conwell, Jeanetta Zimmerman, Lockhart Harman, and Emma E. Knipe, and Messrs. D. H. Otis, C. E. Yeoman, and J. A. Zimmerman.

Farmers' Institutes have been provided for as follows: At Girard, February 13th and 14th, with Professors Walters, Lantz, and Kedzie representing the College; at Hays City, February 20th and 21st, with Secy. Graham and Mrs. Winchip, and at Enterprise, February 27th and 28th, to which Professors Walters, Kellerman, and Georgeson are assigned.

The third annual exhibition of the Hamilton Society, Saturday evening last, was well attended by a houseful of friends who took great interest in the affair. That the Hamiltons do not lack for "talent" was shown by the highly creditable manner in which the carefully prepared programme

was carried out. Corresponding Secretary Waugh gives details in his report elsewhere in this issue.

Thanks to the energetic efforts of E. H. Kern, class of '84, the Jewell County Institute, held last week at Mankato, was an unqualified success, both in interest and attendance, in spite of the combination of bad roads and influenza, which caused the absence of several important speakers.

THE WEATHER FOR JANUARY.

The mean temperature for the month of January, 1890, was 23.1° , which is 1.49° below the average. Of the twenty-nine preceding Januaries, seventeen have been warmer and twelve cooler; the extremes being 37.16° in 1880, and 13.27° in 1886. The highest temperature for the month was 62° on the 30th; the lowest, -19° on the 13th and 16th, a range of 81° . The coldest day was the 15th, the mean temperature for the day being -5° . The warmest days were the 4th and 30th, the mean temperature in each case being 44° . The mean temperature of the observations at 7 A. M. was 16.97° ; at 2 P. M., 32.45° ; at 9 P. M., 21.48° .

More moisture was precipitated than in any other January on the record, the total for the month being 2.31 inches, while the average rainfall for January is but .75 inch. The lowest recorded is .00 in 1876. 10.5 inches of snow fell during the month. From the night of the 11th-12th, to the night of the 12th and 13th, $7\frac{1}{2}$ inches fell, which was supplemented by a $2\frac{1}{2}$ inch snow on the 22nd. These two snows lasted until about the 26th, when they began to melt rapidly, and by the end of the month all, excepting drifts in shaded places, had disappeared.

The mean barometer for the month was 29.035 inches: at 7 A. M., 29.038 inches; at 2 P. M., 29.021 inches; at 9 P. M., 29.047 inches. Maximum, 29.545 inches, on the 16th; minimum, 28.402 inches, on the 10th; monthly range, 1.143 inches.

There were seven cloudless days and five cloudy ones. Nineteen days were over one-third cloudy, and twelve were over two-thirds cloudy. There were two fogs.

The wind was from the northwest twenty-two times; north, nineteen times; southwest, sixteen times; southeast, nine times; northeast, nine times; west, eight times; east, five times; south, four times, and none once, at the hour of observation. The run of wind for thirty days was 5,787 miles. This gives a mean daily velocity of 192.9 miles, and a mean hourly velocity of 8.04 miles. The highest daily velocity was 419 miles on the 12th; the lowest, 64 miles on the 18th. The highest hourly velocity was 28 miles on the 24th, between 12 M. and 1 P. M.

The table below gives a comparison with the preceding Januaries:

January.	Number of Rains.	Rain in Inches.	Mean Temperature.	Maximum Temperature.	Minimum Temperature.	Mean Barometer.	Maximum Barometer.	Minimum Barometer.
1859	4	1.50	31.03	59	-3	.....	.....	.....
1860	1	.60	23.13	60	-9	.....	.....	.....
1861	3	1.35	24.86	60	-9	.....	.....	.....
1862	3	1.50	18.22	42	-6	.....	.....	.....
1863	2	.66	36.09	69	-4	.....	.....	.....
1864	3	.44	23.97	60	-13	.....	.....	.....
1865	2	.33	27.45	49	-5	.....	.....	.....
1866	2	.65	22.53	47	-12	.....	.....	.....
1867	1	.30	18.50	61	-12	.....	.....	.....
1868	8	1.15	30.77	54	9	.....	.....	.....
1869	2	.05	27.73	53	-3	28.78	29.30	28.00
1870	4	.53	28.78	62	-7	.....	.....	.....
1871	2	.13	25.18	51	-8	.....	.....	.....
1872	5	.84	19.71	49	-14	.....	.....	.....
1873	1	.50	26.35	60	-4	28.72	29.33	28.10
1874	2	.22	15.30	43	-17	28.80	29.40	28.42
1875	3	.00	33.85	62	-7	28.83	29.37	28.30
1876	2	.46	25.12	64	0	28.95	29.50	28.38
1877	6	.35	33.09	55	0	28.70	29.25	28.41
1878	3	.56	37.16	61	15	28.55	29.10	28.05
1879	3	.50	19.54	49	-18	28.70	29.19	28.10
1880	4	.42	31.67	60	-1	28.73	29.23	28.20
1881	3	.25	18.05	55	-15	28.73	29.14	28.32
1882	1	.30	21.52	63	-22	28.78	29.25	28.20
1883	4	1.08	16.28	44	-18	23.76	29.20	28.10
1884	5	.36	13.27	51	-19	28.98	29.57	28.52
1885	4	.68	22.25	62	-23	28.92	29.56	28.26
1886	2	.65	15.43	63	-2	29.22	29.86	28.60
1887	3	.78	27.84	53	-1	29.03	29.39	28.44
1888	5	2.41	23.10	62	-19	29.04	29.55	28.40
Mean	3	.75	24.59	56.8	-9.2	28.85	29.36	28.23

Prizes, first of \$300, second of \$200, are offered for essays on "Women as Wage-Earners;" also, a prize of \$250 for the best essay on "Local Taxation of Personal Property in the United States." Conditions and requirements for competitors may be had by addressing Prof. Richard T. Ely, Secretary American Economic Association, Baltimore, Md.

GRADUATES AND FORMER STUDENTS.

Miss Eva Couse, Third-year in 1879-80, is said to be one of the best teachers of Johnston County.

A. E. Newman, Fourth-year in 1888, writes from Kingman, hoping to return and complete his course of study.

Mattie I. Farley, '89, writes from her home in Melvern that she is well and strong, ready for some good work.

Miss Mary Kokanour, Fourth-year in 1886-7, showed a friend through the various departments of the College on Thursday.

Agnes E. Elliott, student in 1887-8, called at the College recently in the company of her cousin, W. W. Hutto of the Third-year Class.

The Manhattan *Republic* states that the nine-months old son of J. J. Points, '67, and Alice Stewart Points, '75, Omaha, died suddenly last week.

Stuart J. Hogg, special student in 1883-85, is announced as general manager and agent of the British Land and Mortgage Company of Manhattan.

It is rumored, according to the Manhattan *Nationalist*, that P. M. Kokanour, Third-year in 1885-6, will soon engage in the newspaper business on his own account.

Jesse Housekeeper, student in 1885-6, has for seven months past been employed as traveling collector in the art department of D. Appleton & Co., with routes in Kansas, Missouri, and Arkansas.

Talking about horns, the pair recently mounted by Fred Elliot ('88), now hanging in his father's office, are four feet and nine inches from tip to tip, and are probably the finest specimens of the kind in the State, and well worth looking at.—*Manhattan Republic*.

Miss Phoebe E. Haines, '83, teacher in the Manhattan schools, has been confined to her room for about two weeks by la grippe. Miss Haines's school was taught by her sister, Mrs. Emma L. Haines Bowen, '67, until Monday last, when she was attacked by the same disease, and the school was dismissed.

W. H. Olin, '89, Principal of the Wabaunsee Schools, with the aid of his scholars, presented an interesting literary and musical programme on Wednesday evening, the occasion being the postponed Kansas Day exercises. Misses Jennie and Julia Greene, and Messrs. Sanders, Campbell, Hutto, and Mattoon, of this College, took part in the musical programme. They mention the presence at the entertainment of Misses Winnie Cotton and Mary Cottrell and W. L. Cotton. The former is teaching near Wabaunsee.

COLLEGE SOCIETIES.

Scientific Club.—President, O. P. Hood; Vice-President, J. T. Wilder; Secretary, A. A. Mills; Treasurer, Abbie Marlatt; Board of Directors—J. D. Walters, J. F. Morrison, and O. E. Olin. Meets in Chemical Laboratory on the fourth Friday evening of each month.

Webster Society.—President, G. E. Stoker; Vice-President, S. C. Harner; Recording Secretary, H. W. Avery; Corresponding Secretary, C. A. Campbell; Treasurer, J. W. Ijams; Critic, W. T. Swingle; Marshal, B. H. Pugh. Board of Directors—G. E. Stoker, J. A. Davis, C. A. Campbell, W. S. Arbuthnot, S. N. Chaffee. Meets Saturday evening at half-past seven o'clock.

Alpha Beta Society.—President, Marie B. Senn; Vice-President, W. W. Hutto; Recording Secretary, Delphi Hoop; Corresponding Secretary, Sadie Moore; Treasurer, J. N. Harner; Marshal, P. E. Westgate; Director, V. O. Armour; Critic, May Harman. Meets Friday afternoon at three o'clock.

Hamilton Society.—President, S. VanBlarcom; Vice-President, A. K. Midgley; Recording Secretary, A. E. Martin; Corresponding Secretary, F. A. Waugh; Treasurer, G. W. Wildin; Critic, F. A. Campbell; Marshal, R. W. Newman. Board of Directors—A. F. Cranston, F. A. Waugh, F. A. Campbell, U. G. Balderston, C. P. Hartley. Meets Saturday evening at half-past seven o'clock.

Ionian Society.—President, Julia Pearce; Vice-President, Doris Kinney; Recording Secretary, Lottie Short; Corresponding Secretary, Maude Whitney; Treasurer, Myrtle Harrington; Marshal, Kate Pierce; Critic, Fanny Waugh. Board of Directors—Effie Gilstrap, Phoebe Turner, and Alice Vail. Meets Friday afternoon at 3 o'clock.

Young Men's Christian Association.—President, W. H. Sanders; Vice-President, V. O. Armour; Recording Secretary, H. B. Gilstrap; Corresponding Secretary, R. W. Newman; Treasurer, H. Darnell. Meets in Horticultural Hall Sunday afternoon at three o'clock.

Young Women's Christian Association.—President, Christine Corlett; Vice-President, Ora R. Wells; Recording Secretary, Callie Conwell; Corresponding Secretary, Ava Hamill; Treasurer, Sarah Cottrell. Meets Tuesday morning at eight o'clock in Society Hall.

SOCIETY HALL, January 31st.
 The Alpha Beta Society was called to order by Pres. Senn. Music, a duet, by Mary Senn

THE INDUSTRIALIST.

charitable; that the mother was generally too busy to devote much attention to her sons, and that country air is not always wholesome and sweet. J. N. Harner further argued the affirmative, showing that the largest per cent of our great and good men were country boys, closing with the quotation, "God made the country, man the town." W. W. Conner, on the negative, pictured farm life "as it is," by one who has been there, in a very laughable manner. Argument closed by Mr. Clothier and Miss Clark. The Judges, Messrs. Davis, Otis, and McAdams, decided two to one in favor of the affirmative. The *Gleaner* was edited and read by E. P. Smith, and was an excellent number. Recess, Music, instrumental, by Christine Corlett. Our new Newsman, B. H. Pound, presented his first installment of news, which he had divided into four classes—foreign, national, state, and local. The selections were good and interesting. Extemporaneous speaking followed, in which many took part, the protection and free trade question receiving the most attention. Report of Committees. Names of Ella Barnes, W. Gilkerson, and E. W. Gilkerson proposed for membership. Report of Critic. Adjourned. S. M.

COLLEGE CHAPEL, February 1st. At eight o'clock Pres. VanBlarcom took the chair, and the large audience came to order. The College Orchestra gave the overture, a medley, entitled, "Old Folks' Request." Pres. Fairchild led in devotion.

A. F. Cranston treated the subject, "Science and Religion." Every civilization has its specific character: with Greece it was art and eloquence, with Carthage, commerce; with Rome, war. This is an age of reason, or science. The works of Galileo, Harvey, Bacon, Kepler, Newton, and Herschel are the fruit of this age. Some have charged scientists with fallacious reasoning and illegitimate application of their conclusions to religion. The true scientist is the champion of Truth and the sleuth-hound of Error. He who will not accept a logical conclusion is blind, hopelessly blind. There is a scientific religion neither agnostic nor dogmatic; there is a scientific morality neither altruistic nor egoistic. The boundless fields of sky, the sun, the moon, the planets, and the stars, flying meteors, the eternal march of the seasons, forests, mountains, caves, and cataracts, fountains, rivers, oceans, life surging along the streets of the city, death sleeping in the graveyard—these are for your admiration and your study—among these you can make your heaven or your hell.

The declamation, "Pyramids not all Egyptian," written by P. O. Barnes, was delivered by L. S. Strickler. Mankind is toiling for fame. Every plan is adopted, every sacrifice freely made. The student gives his life to study, the conspirator incites rebellion, the warrior dares and deals death—all for fame. Mohammed, Caesar, Alexander, and Napoleon have gained names more lasting than Egyptian pyramids, but their immortality has cost them dearly. But many men have builded pyramids of pure renown. Luther and Milton are remembered for their good works. Their pyramids shall stand through eternity.

"Ought we to remove the duties from South American imports?" was affirmatively discussed by Ben Skinner. Protection was necessary during the infancy of our Republic, but now it is uncalled for, either as a source of revenue, or as an aid to manufactures. Wool and sugar are the only articles imported from South America under duty, and most of the wool is the coarse variety used in the manufacture of carpets. Neither farmers nor manufacturers can be damaged by taking the tariff from an article not produced at home. For years we have protected the wool industry and the sugar industry, and what is the result? With the exception of a few Kansas sorghum mills and now and then a poor, half-starved sheep bleating mournfully on our western plains, the scheme is a failure. Why try to monopolize the earth when in so doing we injure none but ourselves? Nature says what we can produce, and all the powers of earth cannot change our climate. South American nations look to the United States for sympathy and example. Their late progress has placed them in a position where their political reform is assured. Let the United States help in this progress until the Americas shall rise, bound by commercial friendship, the example of the world.

F. A. Waugh argued the negative. Protection has been adopted as the policy of the United States. South America makes her importations largely from Europe, while her exports come to the United States. The object to be attained by the United States is to export more to South America. In this case, the removal of tariffs is utterly useless. Some time ago, when the United States removed the tariff from coffee, Brazil put the same tariff on as an export duty. The consular reports say that the wool of Uruguay is the finest in the world. Farmers need protection more than any other class. South America's import of sugar is small;—her sugar, duty free, cannot compete with Cuban sugar. There are other reasons why inter-American commerce is poor. South American governments lay heavy tariffs on the necessities of life. Their customs regulations are very disadvantageous to importers. The evil, then, which we seek to alleviate is not one of blockaded importation, but one of impeded exportation, and the remedy does not lie in the removal of tariffs.

The College Quartet, consisting of Messrs. Hutto, Mattoon, Campbell, and Sanders, sang "Breezes of the Night."

The Hamilton *R. order* was edited and read by M. G. Riddell. Besides several locals, the articles published were, Making the Best of Things, Our Society's Relatives, A parody on "My Brother," entitled La Grippe, A Trip through the Realms of Eidolons, The Jigger, Reverie of the Gate Post, and Alexander Hamilton.

G. J. VanZile followed with an oration on "The Present West, and Possibilities of Its Future." The following is an extract from its closing: "A glance into the future suggests a scene which challenges our admiration. We realize that we are standing on the threshold of a grander civilization than the world has ever yet beheld. We see within our boundaries the talent of the twentieth century unfold. We see the gates of science open, and the undeveloped resources of nature are seen to enter in. We see, in short, the hidden mysteries of the Universe explained. The day is fast approaching when these things shall come to pass. It cannot be a mere illusion that we see. Its coming is announced in every school throughout the land. We hear it echoing from the silver chime of every church bell. All nature seems to join in one harmonious accord. Each patriotic soul awaits with joyous pride the dawning of that day when the great West shall be the light-house of the world's civilization, sending its effulgent rays of Christian liberty to brighten every home; when ignorance shall be a stranger in our land; when poverty and destitution shall have been forgotten, and when this once rejected portion of our globe shall stand before the world, the brightest jewel in the diadem of nations.

While the stage was being set for the play, a piano duett, Grande Valse Brillante, was rendered by Misses Nichols and Read.

The play was "Lend Me Five Shillings," a farce. F. A. Campbell, H. C. Cobb, L. C. Criner, and U. G. Balderston rendered their parts especially well. The success of the play was due in a great measure to F. A. Campbell and H. C. Cobb, play committee.

A Quartet, "Go to Thy Rest in Peace," ended the programme. The music was furnished under the direction of F. A. Campbell, committee on music.

The handsome programmes were entirely the work of the Printing Department, and were a great credit to everyone concerned.

WAUGH.

IONIAN HALL, January 31st. Society was called to order by Vice Pres. Kinney and joined in singing and in repeating the Lord's Prayer Roll-call. Duet, "Star of the Twilight," Kate Pierce and Flora Wiest, accompanied on the organ by Maude Whitney. This was much appreciated by the Society. The Oracle was read by Miss Hortensia Harman. This was an unusually bright and interesting edition, and was particularly well read. The debate followed, "Resolved, That the prohibition amendment should be resubmitted." The affirmative was argued by Lizzie Meyers, who spoke of the resubmission agitation and its results. The negative was opened by Miss Mudge, appointed in the absence of Miss Pencler. She spoke of the evil effects of liquor. Miss Shafer was the second speaker on the affirmative. Her remarks created much amusement. Maggie Wiley was the second speaker on the negative. The judges, Misses Houghton, Beverly, and Selby, decided unanimously in favor of the negative, much to the satisfaction of the audience. The programme closed by an instrumental solo by Miss Mudge. Business. Assignment of duties. Report of Critic. E. G.

Fast walkers are always in demand, and farmers are urged in a stereotyped way to see that their colts are trained from their very earliest days so to walk. Why colts only? Should not he train himself and his children in the same desirable quality? Should he not see that he hires help who are fast walkers? Of all things to try one's patience, nothing surpasses the sight of a slow, loitering, walker whom you have sent on a hurried message or for something needed for immediate use in the field.—*Maryland Farmer*.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

Larned High School graduates its first class this coming June.

The Smith Center *Bulletin* reads its subscribers an impressive lecture because the efforts to get a public library for that place have so far failed.

The Board of Education passed a resolution asking the Mayor to call an election to vote \$49,000—\$38,000 for a high school and site, and the balance for other purposes.—*Arkansas City Dispatch*.

Our thanks to Supt. Buel T. Davis of the Atchison public schools for a copy of his report for the past year. The document is well written, clear, and concise, and reflects credit upon him, the School Board, and the city.

State Superintendent Winans, with the sanction of the State Board of Education, has fixed three periods—June 9th to July 4th, July 28th to August 22nd, and August 4th to August 29th, for the County Normal Institutes for 1890.

The *Eye* unwittingly made the misstatement recently that the Stockton Academy had been closed. We have received evidence documentary that this institution is flourishing like a green bay tree, and hasten to correct the vile slander we gave utterance to by inadvertence.—*Oberlin Eye*.

The *Manhattan District Methodist* is the name of a new monthly, edited and published by Rev. Jas. Lawrence. Its name indicates its sphere of work. The first number is well written and well printed, and contains a number of interesting illustrations. The price is 50 cents per annum.

Up at Beloit they've carried the flag business so far that they not only have them waving from all parts of the school building, but the teachers wear them in their hats on all occasions. A supply has been ordered for the scholars, and the depot agent has to use them to stop trains.—*Concordia Day-light*.

Rector Thomas of St. John's College at Salina has been elected President of Bethany College at Topeka. His place in St. John's College will be occupied temporarily by the Rev. E. P. Chittenden of Salina. Both institutions belong to the Episcopal Church of Kansas, and are reported to be in a flourishing condition.

The State Oratorical Contest of 1890 will be held in the State University Chapel, February 14th. The University will be represented by H. M. F. Bear, Washburn College by James Parton, the State Normal School by J. Ruggles, and the Kansas Wesleyan University by H. L. Prescott. The names of the participants of other colleges we have not learned.

Preparations are being made for a joint County Teachers' Association to be held at Eureka, Friday and Saturday, February 21st and 22nd. The teachers of Elk County will join with those of Greenwood, and together will make this the educational event of the season. Hon. G. W. Winters, State Superintendent of Public Instruction, will be in attendance.

The Kansas poet, Eugene Ware, seems to have scored a success in his volume of poems, "Rhymes of Ironquill." The book is meeting with a favorable reception not only in this State but also throughout the East. W. D. Howells is said to be much pleased with the "Rhymes," and will review the book in a forthcoming number of *Harper's Magazine*.—*Washburn Reporter*.

Kansas Day was generally celebrated in the schools of the State, and the American flag floated from most public buildings and school-houses. At the Harrison Street School in Topeka the scholars had contributed sufficient to purchase a handsome flag, and at noon it was hauled to the top of the flag-staff by the united efforts of 500 or 600 boys and girls. Addresses were made by School Superintendent Bloss and the Principal, patriotic songs were sung, and cheers given.

No city in the State has better schools than Leavenworth, and none takes more interest in educational matters. Instead of frittering away its strength in the founding of so-called colleges, as so many Kansas towns have done, Leavenworth has concentrated its efforts upon the public school. The High School has a better standing today than three-fourths of the so-called denominational universities; its course of study has more pedagogical

value, and its teachers are better timber, and are better paid. The Principal receives \$200 per month, the Assistant Principal \$150, all other teachers of the high school \$100, while the Principals of the ward school range from \$70, the salary paid to the Principal of the colored school in South Leavenworth, to \$133, the salary of the Principal of Morris School.

Mr. A. T. Soule, the founder of Dodge City College, died at his home in Rochester, N.Y., January 17th. Mr. Soule has done a great deal for Western Kansas beyond the founding of Soule College, for which he gave \$50,000. He constructed the Dodge City water-works, established a bank in Spearville, was a partner in the National Bank of Dodge City, and commenced the building of the Dodge City, Montezuma, and Trinidad Railway. Who will and who can take up his mantle and wear it?

COLLEGE BUSINESS.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. Applications for extension of time on land contracts should be sent to the Secretary of the Board of Regents, at Manhattan.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Kellerman, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study or work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

Applications for Farmers' Institutes should be addressed, as early in the season as possible, to the President.

The Experiment Station should be addressed through the Director.

TERMS OF ADMISSION.

Applicants for admission at the beginning of the College year must be at least fourteen years of age, and able to pass a satisfactory examination in reading, spelling, writing, arithmetic, including percentage and interest, geography, and elements of English grammar. Those applying later in the year must show sufficient advancement to enter the classes already in progress. Every effort should be made to begin with the first day of a term, in order to advance with classes from the first.

Applicants of mature age who, for lack of advantages, are unable to pass the full examination, may be received on special conditions.

Applicants for advanced standing in the course must pass examination in all the previous studies of the class to be entered; but, if they have pursued such studies in other institutions of similar rank, they may receive credit for their standing in those institutions upon presenting a certificate from the proper officer, showing that their course has been equivalent to that given here.

MANHATTAN ADVERTISEMENTS.

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GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

THE VALUE OF CROPS FOR FIVE YEARS.

BY SUPT. J. S. C. THOMPSON.

As a result of the present depressed condition of agriculture, the farmers have been treated to such a surfeit of advice that they are disposed to regard with suspicion any suggestion that may be made looking to the betterment of their condition. This feeling of distrust is increased to a great extent by untimely criticisms which some of the "newspaper farmers" occasionally indulge in, one writer recently going so far as to say that "if Kansas farmers would plant at proper times, and cultivate with diligence, they might reap with greater profit," apparently forgetful of the fact that to intelligent planting and thorough cultivation, as much as to the favorable season, the immense corn crop of Kansas, and, for that matter, the entire West, is due. The plaint of the western farmer is not more corn, but better prices; and with bursting cribs and mountains of corn for which he cannot provide shelter, even if it were worth it, he can read insinuations as to his industry only with feelings of indignation or commiseration, according to his temperament.

But the avalanche of newspaper articles in the interest of the farmer does not deter me from my effort to speak a word in favor of diversified farming from the standpoint of the statistician.

The following tables are compilations from the reports of the Kansas State Board of Agriculture for five years past, and are the strongest arguments that can be used in favor of a diversity of crops. They show that corn, wheat, and oats have been grown—with the maximum of labor and the minimum of profit, or no profit at all—to the comparative exclusion of crops that have yielded the most money per acre. Take the item of corn, the least profitable of crops, as will be shown by the values per acre following the tables: The average acreage for five years is 6,282,468, and the average value, \$41,855,320, or \$6.66 per acre for the period covered. Wheat and oats make scarcely a better showing, the value of the former per acre being \$6.69, and the latter \$6.81, with an acreage of 1,526,624 and 1,401,541 respectively. Of broom corn, there were an average of only 51,727 acres planted, which was valued at \$1,053,008, or \$20.35 per acre; and of hemp, 240 acres, valued at \$8,892, or \$37 per acre. The tables show other interesting facts which need not be repeated here.

Cotton is as yet in the experimental stage except in a few of the southern counties, where it is grown at a handsome profit, according to the newspaper reports from that section; and they so nearly agree in all important particulars that they cannot be discredited. In 1887, according to the Biennial Report of the Board of Agriculture, sixty-eight acres of cotton were grown in Norton County, in the northwestern part of the State, valued at \$1,360, or \$20 per acre; and the same year Marshall County, on the northern boundary, had fifty-six acres to its credit, valued at \$1,120.

Now, if these figures be correct, and they undoubtedly are, do they not point the way to a better agriculture? They seem to show conclusively that to the overproduction of corn, wheat, and oats the low prices of these articles may be attributed.

YEAR.	WHEAT.		CORN.		OATS.	
	Acres.	Value.	Acres.	Value.	Acres.	Value.
1885	1,969,723	\$ 6,222,934	5,266,034	40,428,327	905,372	\$ 6,558,303
1886	1,074,860	7,619,946	5,802,018	37,666,031	1,178,642	8,860,603
1887	1,208,619	5,352,502	6,530,392	26,830,422	1,577,076	12,232,243
1888	1,078,943	11,750,996	6,993,207	52,305,948	1,056,814	12,470,908
1889	1,550,947	19,842,573	6,820,693	51,049,876	1,089,801	7,654,512
Total	7,603,122	51,131,011	31,412,344	209,276,604	7,007,705	47,776,860
Average	1,526,624	10,226,202	6,282,468	41,855,320	1,401,541	9,555,373

YEAR.	BROOM CORN.		SORGHUM.*		POTATOES.	
	Acres.	Value.	Acres.	Value.	Acres.	Value.
1885	28,492	\$ 650,794	41,875	\$ 203,125	81,171	\$ 3,947,431
1886	68,399	1,352,172	37,669	203,683	99,394	4,402,305
1887	70,111	1,472,331	69,121	601,210	114,728	6,883,680
1888	52,054	258,503	154,942	1,026,948	126,181	5,234,356
1889	39,583	831,243	249,230	2,085,122	109,441	3,802,229
Total	258,639	\$ 2,605,043	552,837	\$ 4,360,088	530,921	\$ 24,360,001
Average	51,727	\$ 1,053,008	110,567	\$ 872,017	106,184	\$ 4,872,000

YEAR.	CASTOR BEANS.		COTTON.		TOBACCO.	
	Acres.	Value.	Acres.	Value.	Acres.	Value.
1885	23,135	\$ 264,222	692	\$ 15,500	535	\$ 42,800
1886	30,041	459,615	682	16,368	409	24,540
1887	43,342	304,939	1,636	34,780	740	44,400
1888	14,775	122,502	2,150	51,600	559	33,540
1889	21,158	240,835	1,393	40,952	699	41,949
Total	133,054	\$ 1,452,113	6,553	\$ 157,200	2,942	\$ 187,229
Average	26,610	\$ 290,422	1,310	\$ 31,440	588	\$ 37,445

YEAR.	MILLET AND HUNGARIAN.		HEMP.		FLAX.	
	Acres.	Value.	Acres.	Value.	Acres.	Value.
1885	582,088	\$ 6,570,694	232	\$ 10,440	122,199	\$ 769,776
1886	570,600	4,873,890	158	5,530	87,904	791,136
1887	508,441	4,764,901	327	11,445	142,577	1,190,629
1888	471,539	3,997,517	239	8,305	162,055	1,205,199
1889	431,714	3,453,712	248	8,680	113,320	1,200,305
Total	2565,282	\$ 23,660,714	1,204	\$ 44,460	628,664	\$ 5,158,045
Average	513,056	\$ 4,732,142	240	\$ 8,392	125,732	\$ 1,031,609

* Sorghum for forage.

	VALUE PER ACRE.

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tum. Its branches are now blackened nearly to the ground.

It is much to be regretted that this most beautiful of the privets is so tender here. The bush Honeysuckles, though showing many swollen buds, seem to have been little injured. The fragrant-flowered climbing Hall's Honeysuckle has been allowed to grow at will in a broad, matted row. This was a mass of green up to the New Year, and now we have only to pull away the blackened outer vines to find the inner ones as bright and fresh as ever.

PROPAGATION FROM YOUNG PLANTS.

BY PROF. E. A. POPENOE.

WE are sometimes asked by amateurs in horticulture what relation the present non-fruiting condition of the parent, or stock-plant, has to the final fruiting of the young plant grown from it; the inquirer believing that in order to insure the final fruitfulness of young plants grown from cuttings or layers, or by grafting, it is necessary to select wood for propagation from trees or vines that are themselves in full bearing. It may be answered, that there is but one case where this caution need be observed, and that is when the variety of the stock-plant is not known, or, in other words, when we do not know whether it be itself a sterile plant or not—an uncertainty that does not subsist among the plants likely to be found growing in our gardens.

When the stock-plant is of a known sort,—for example, the Ben Davis apple, or the Concord grape,—the age at which the propagation is effected has no effect whatever upon the fruitfulness of the young plants; they will fruit, as usual with the variety, at the proper age.

The natural principle underlying the modes of propagation upon which the present question bears may be stated, in general, as follows: A tree is a collection of individuals called buds, each bud in a measure distinct, and potentially a tree in all characteristics like the parent, needing only careful separation and rooting, either directly or through the medium of a rooted plant, to be such a tree. Now, the present non-fruiting state of the Ben Davis tree or the Concord vine is not a permanent characteristic, but a temporary state for that variety, and as such is not perpetuated by propagation. It is a common practice with nurserymen to select in propagation the young growth of trees still in the nursery rows, because it is more convenient, as well as because such wood is straight, smooth, and vigorous, and works to greater advantage than would the short-jointed, crooked twigs from old, bearing trees. Yet, after many years of this practice, we do not hesitate to buy and plant trees propagated from such wood, having full confidence that they will bear when old enough, according to the habit of the variety.

HOW AND WHEN TO DRINK WATER.

According to Dr. Leuf, when water is taken into the stomach it does not mingle with the food, as we are taught, but passes along quickly between the food and lesser curvative towards the pylorus, through which it passes into the intestines. The secretion of mucus by the lining membrane is constant, and during the night a considerable amount accumulates in the stomach; some of its liquid portions is absorbed, and that which remains is thick and tenacious. If food is taken into the stomach when in this condition it becomes coated with this mucus, and the secretion of the gastric juice and its action are delayed. These facts show the value of a goblet of water before breakfast. This washes out the tenacious mucus, and stimulates the gastric glands to secretion. In old and feeble persons water should not be taken cold, but it may be with great advantage taken warm or hot. This removal of accumulated mucus from the stomach is probably one of the reasons why taking soup at the beginning of the meal has been found so beneficial.

THE WAY TO BETTER TIMES.

Senator Plumb, in answer to a Shawnee County farmer, offers some excellent suggestions. We clip from the letter as published in the *Capital*:

"I know how hard times have been with our farmers, first without crops and then when there is a good crop, the prices are so low as to be wholly unremunerative. I know that a portion, at least, of the difficulty grows out of an inadequate supply of the currency, and this Congress can and ought to remedy, and I have great hopes, also, that before the close of the present session, something at least reasonably adequate will be done. I am also hopeful that there are other causes which will operate in the right direction before long, and shall be greatly surprised if during another season things are not very much better. After all, it is probably true that there are some adverse influences beyond the reach of legislation. The number of sellers is many, and the number of buyers from the sellers few. Every farmer is an active competitor with every other farmer, and in the process of this competition, sends his grain and stock to the two or three great markets of the country, where a handful of men only buy, and these substantially under an understanding with each other, which understanding operates to reduce prices. It is an understanding, also, which probably cannot be reached by law, not taking the actual formal shape of a trust or combination. Our farmers, then, buy back from the same centers, and from a handful of men, everything which they eat and wear. Too many of our Kansas farmers, I am sorry to say, do not even raise their own food, but rely on buying it from Kansas City and other markets; in fact, buy back their own bacon and flour; often buy fruit which they could easily raise for themselves, and so on, thus contributing to their weakness, and the power of those who are their commercial enemies. If the farmers of Kansas would, during the next ten years, raise, as far as possible, their own food, and keep at home the pork and beef necessary for their own needs, and for their neighbors' use, the effect of prices would be realized by reason of the fact that less money expenditure would be necessary. I hope and believe that the tide will turn, and I hope that, as one of the elements in that turning, and one which will be as helpful as any, will be the exercise by our people of the power which they themselves have, the nature of which I have indicated, and as I have before said, I am also hopeful that proper legislation will be passed. I have labored to this end heretofore, and shall not fail to do everything possible to bring about the emancipation of our people, so far as an adequate supply of currency can do it."

SAVE YOUR PENNIES.

The school savings-bank is an institution of considerable importance, and the rapidity with which it is spreading through the country challenges attention. The system has received the sanction of the National Bureau of Education and the endorsement of many eminent and wise men. About \$58,000 has been deposited by 9,000 scholars in different States. Out of 4,020 scholars in the schools of Long Island City, 2,272 gave \$452.37 to aid the children that suffered from the Johnstown flood, an act of generosity which they were enabled to perform through the school bank. If the school savings-bank will turn the pennies which are now worse than wasted on cigarettes and chewing gum, into channels of benevolence and other worthy uses, it will merit the everlasting gratitude of parents and the country.—*Exchange*.

NEW ENGLAND FARMERS.

The farmers of New England think they are the poorest off of any in the country, or at least one would think they felt that way to hear them talk. Is it true that they are worse off than those of the West? Those best informed on this subject say no. How would our farmers in any part of New England like to raise and sell corn for ten, twelve, or even fifteen cents per bushel, shelled? And yet these are the prices that prevail in many parts of the West today. Suppose they had to raise wheat and sell it for thirty to forty cents per bushel, as their brother farmers in the West are doing these days, would they not complain bitterly? A gentleman who has been in the West for thirty years recently remarked that, if he were to follow farming for a living, he would come to Massachusetts, where he could raise good crops and always be sure of a ready market.—*The Congregationalist*.

KANSAS THRIFT.

Mrs. Anna Sedlatzek sold her alfalfa seed in the city for \$4.00 per bushel. The crop averaged ten bushels per acre, and considering the value of the three crops of hay cut from the same field, it is apparent that alfalfa is a paying crop, yielding a revenue of about \$50 per acre every season. Mrs. Sedlatzek has a good farm in Sherlock Township, and being a lady of energy and perseverance, she will not only improve her farm, but she will make agriculture pay.—*Garden City Sentinel*.

Secretary Mohler, of the Agricultural Department, has issued his quarterly crop report. One of the most interesting features is the summary showing the total acreage, the total product, and the value of the field crops of the State for the year 1889. The winter wheat crop of last year is valued by Secretary Mohler at \$19,842,543.77, the corn crop at \$51,649,876.10, the oats crop at \$7,945,812.73. The total value of all agricultural products of 1889 was \$104,572,498.00.

Wash. Shuster, who sold a carload of cattle a few days since, says that his corn brought him 35 cents a bushel—that he measured all the grain fed and knows what he is talking about. Ex-Senator Edmonds sold 125 head of steers, and he says he "didn't lose anything" on the corn, which he paid 20 cents for. We quoted Ex-Governor Anthony's statement that he was getting 35 cents for corn by feeding it to cattle, and Mr. Edmonds thought he "could beat that some," but didn't say how much.—*Oskaloosa Independent*.

This has been an ideal season for fall-sown grain. The snow, which has laid on the ground since the first of January, has covered it to the depth of from three to five inches and furnished ample protection and at the same time sufficient moisture to keep it in excellent condition. With a much larger acreage than ever before sown in the country, and the brightest prospects ever before known for its growth and maturity, it is not unreasonable to predict that the rye and wheat crop in 1890 will be the largest and best ever harvested in Ness County.—*Ness City Times*.

FAST HORSES THE BEST.

In purchasing or hiring a plough horse, stake off a mile of road, mount the horse, and see how many minutes it will take him to walk a mile. A horse that will walk three miles an hour is worth at least three times as much as a horse that walks but two miles. The three-mile horse not only does as much work in two days as the two-mile horse does in three, but he enables the man behind the plough to do fifty per cent more work in a day than he can do behind the two-mile horse. And the man and horse consume with the slow team fifty per cent more rations in doing the same work than the fast walker does. In twelve months, the man would do less carting and ploughing with the slow horse than he would do in eight months with the fast walker.

Suppose a farmer to hire a man and a two-mile horse to do an amount of ploughing and carting that takes three months to perform, and pays \$3 a month for the horse, \$3 for his feed, and \$18 for the man, who boards himself; \$24 a month, three months, \$72. If he hires the same man at \$18 a month and pays \$3 for horse feed and \$4 for a fast walker, he will do in two months what the slow team would do in three. Two months, fast team, and feed the ploughman at \$25 a month, \$50. Direct loss by slow horse, \$22. Besides, the work done by the slow horse is not so well or seasonably done—the seed may be put in the ground too late, grass may get ahead of the plough, and the indirect loss by the slow team may be serious, besides the \$22 loss as stated above.—*Colman's Rural World*.

There are young men and women who sorely need help to get an education; and perhaps no money does greater good than that judiciously appropriated to their use. But their ability, rather than their poverty, is the best measure of their need. The wisest way to encourage poor boys and girls to pursue higher courses of study is to offer scholarships to be won by work. Some people have been helped by benevolence to live for awhile in institutions of learning, who might have gained better results by manual labor. But it is rare that a student mistakes his calling who is able to win the aid he needs as a reward of merit. John Hopkins University sets a good example in giving no help to any student simply because he is poor.—*The Congregationalist*.

CALENDAR.

1889-90.

Fall Term—September 12th to December 20th.
 Winter Term—January 7th to March 28th.
 Spring Term—March 31st to June 11th.
 June 11th, Commencement.

1890-91.

Fall Term—September 11th to December 19th.

TO SCHOOL OFFICERS.

The College Loan Commissioner has funds to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioners and the State Agricultural College. Address Jno. E. Hessian, Loan Commissioner, Manhattan, Kan.

LOCAL MATTERS.

Secy. Graham has been elected an officer of the State Grange.

Prof. Hofer looked in upon old friends at the College for a few minutes this week.

Mrs. Winchip meets her class of post-graduates in sewing on Monday and Friday afternoons.

Secy. and Mrs. Graham enjoy a visit from the latter's mother, Mrs. O. McConnell, of Menoken.

Hon. A. R. Greene of Minneapolis spent Sunday with his daughters, Misses Jennie and Julia Greene.

President Fairchild is in attendance upon a meeting of the State Board of Education today in Topeka.

Regent Henshall of Kansas City, Kansas, made a flying business trip to the College on Monday last, returning in the evening.

Rev. Mr. Cocks of Morganville led the chapel exercises on Monday morning, and spent some time in looking over the buildings.

A number of gentlemen from the western part of the State visited the College Monday afternoon under the lead of Manhattan friends.

W. W. Hutto attended the meeting of the Inter-collegiate Athletic Association at Lawrence, yesterday, as delegate of the Athletic Club.

Secretary Graham, Professors Olin and George-son, and Mrs. Winchip will take part in Farmers' Institutes at Russell and Hays City next week.

Mr. Mason, Assistant in Horticulture, spent Saturday with his father near Delphos, Ottawa County, stopping on his return from the Institute at Stockton.

Accidents and la grippe have been the cause of delay in sending to parents report of grades for the fall term. It is hoped that this work may be completed shortly.

Members of the Third-year class are busy with the plotting of last term's surveys. Several have united in a topographical map of the College grounds, including elevations.

G. L. Melton, Second-year student, who was called to his home in Silver Dale last week by the illness of his father, returned on Monday, having left his father in a fair way to recover.

Mr. Chandler, recently from New England, called on Monday in company of Col. S. A. Sawyer of Manhattan. Mr. Chandler, being a machinist, took special interest in the Mechanical Department of the College.

Examinations yesterday had their usual effect of adding to the nervous excitement of study. But the training for emergencies in ordinary life given by such moderate strains is not the least valuable of the uses of examinations.

The Experiment Station will this spring give oats and corn a thorough trial under varying conditions of seeding and culture. Seventy-five varieties of oats, and nearly an equal number of corn, representing the product of almost every State in the Union, have been secured for the experiments.

Mr. A. A. Stewart, whose name, either as student or as member of the Faculty, appeared in the College Catalogue from 1874 to 1881, has purchased the Manhattan *Republic*, daily and weekly. Mr. Stewart has had extensive experience in both editorial and office management, and can be depended upon to give as good a paper as his opportunities allow.

The Farmers' Institute at Stockton, last week, attended by President Fairchild, Prof. Georges, and Assistant Mason, was interesting, though not so largely attended as it might have been but for threatening and stormy weather. The subjects presented were well treated and extensively discussed, showing that interest in actual farming is

increasing in that region. A pleasant visit to Stockton Academy, which has a fine building, a good corps of teachers, and a fair attendance, added to the interest of the stay in Stockton.

Lottie, Prof. Olin's little daughter, met with what, but for the prompt action of her father, might easily have become a serious accident on Tuesday morning. While standing with her back to the base-burner, her apron caught fire, and by the time she reached the dining room, the flames were communicated to her hair. Prof. Olin smothered the blaze with a napkin, but not before the entire back of the apron had been burned away. Lottie escaped with the loss of a few locks of hair.

The College has received and placed in position on the mantel in the reception room, a life-size plaster bust of John Brown. During the time that John Brown was in prison at Charlestown, Virginia, awaiting execution, Mrs. Mary E. Stearns, of Massachusetts, widow of Maj. Geo. L. Stearns, both of whom were devoted friends to Kansas in her hour of greatest need, sent the artist Brackett to the prison, and had him make studies for a marble bust of Brown. Competent judges have pronounced the bust a faithful likeness and a superior work of art. With the idea of promoting the education of the people of our State in an interest in a memorial statue, Mrs. Stearns is enabled by the aid of friends to donate several casts of the bust to State institutions and libraries. It is through the generosity of Hon. Frank W. Bird, of East Walpole, Mass., that the College receives its copy, and by action of the Faculty that gentleman is tendered a vote of thanks. Credit is also given to Hon. F. G. Adams, of the Kansas Historical Society, for services in this connection.

A note from Prof. Shelton, dated Honolulu, January 22nd, describes in brief a day spent in that island city: "I wish I could in some small measure tell you all that this delightful day has been to us all. Such an inexpressibly delicious climate; such bowers of roses, lantanas, oleanders, and literally scores of other equally beautiful flowers and plants I have never before seen or dreamed of. This has been about our programme for today: 1. A delightful drive all over the city with Mrs. Gilman. 2. A railroad excursion, up the coast ten miles, kindly given by one of our passengers, who owns the only railway on the island. 3. A delightful visit to the home of Mr. Atherton. 4. Many minor excursions here and there since. Isn't that a fair day's work? On the whole, I do not know whether I have seen a day so entirely free from alloy." Mrs. Gilman and Mr. Atherton are relatives of Miss Carrie Gilman, whose visit last August at President Fairchild's will be remembered by many friends in Manhattan. The steamer was to leave at midnight for the fourteen-days' run to Auckland.

GRADUATES AND FORMER STUDENTS.

J. C. Welch, student in 1877-80, is now a student in the Stockton Academy.

Word comes from Bogue, Graham County, that F. H. Avery, '87, is the proud father of a boy.

E. Ada Little, '86, is again at home in Manhattan, after several months of teaching in Marysville.

J. C. Wilkin, student in 1887-8, is teaching near Stockton, Rooks County. He hopes to return sometime to complete his course.

R. A. Clark, Second-year in 1889, writes from Oberlin, O., that he is delighted with his opportunities in the Conservatory of Music there.

Louis E. Humphrey, '77, a prosperous druggist of Chapman, was interviewed by Prof. Olin during his visit there. Mr. Humphrey is the manufacturer of a hair restorative which he claims will meet even the necessities of his classmate, Professor Failyer.

In the absence, this week, of Professors Lantz and Walters and Mrs. Kedzie at the Farmers' Institute in Girard, A. A. Mills, '89, Susan W. Nichols, '89, and Abbie L. Marlatt, '88, all post-graduate students, have had charge of classes in the several departments..

R. C. Harner, student in 1887-8, is visiting his relatives and friends at the College. Having been obliged by la grippe to give up his school, he leaves it in the hands of S. N. Chaffee, third-year, who will try to go forward with his class next term. Mr. Harner is planning a tour in California for health's sake.

COLLEGE SOCIETIES.

SOCIETY HALL, February 8th.
 Pres. Stoker called the Websters to order at 7:30. The roll-call showed a large attendance of members, and a number of visitors were noticed. The debate for the evening was on the question, "Resolved, That there should be no sex qualification in suffrage." Frank Burtis, in introducing the affirmative side of the question, cited Greece and Rome as examples of nations which existed under the rule of men alone; and although they existed for many years, their downfall was attributed to the fact that they lacked the Christian influence of women. Considering it from the standpoint of knowledge or morals, woman is, with regard to the first, certainly as proficient as man; in the second place, there is no doubt but that woman far excels man in her moral character. Women hold property and are taxed without representation, with a few exceptions. The idea that women would not vote if they had the privilege is absurd, for in Wyoming, where they are allowed the right of suffrage, nine-tenths of them vote while only eight-tenths of the men do. Paul Milner, in opening the negative, said that it was his opinion that Greece and Rome did not fall on account of the absence of the influence of woman. We admit that woman has education, but it is not practical. She has been educated in a different line from that of man, and is not posted in politics. We do not believe that woman's influence can be felt through the polls. In Leavenworth, where the vote was not restricted as to sex, the worst anti-prohibitionist in the State was elected as Mayor. If women were allowed to vote, there would be differences of opinion between husband and wife which would probably make discord in the family which would, of course, be very demoralizing. E. W. Curtis, the next speaker on the affirmative, stated that the difference of opinion did not produce discord. Cases are known where wives have worked against husbands in a campaign with no bad results. His speech closed with an argument as to the rights of citizens, it being based upon a part of the 14th Amendment to the U. S. Constitution: "All persons born or naturalized in the U. S. and subject to the jurisdiction thereof, are citizens of the U. S. and of the State wherein they reside. No State shall make or enforce any laws which shall abridge the privileges or immunities of citizens of the U. S., nor shall any State deprive any person of life, liberty, or property without due process of law, nor deny to any person, within its jurisdiction, the equal protection of the laws." The negative was again discussed by C. E. Davis. The small amount of practical knowledge which woman has would allow her to be used as a tool in the hands of politicians and demagogues. Woman was not made to rule. It is divinely instituted that woman should be under the care of man, and under his protection, and it is but following out this plan when we put the reins of government into the hands of man and not of woman. Messrs. Burtis and Milner reviewed the points brought forward by the affirmative and negative respectively. The vote as to the winning side resulted in a tie. A declamation by G. C. Gentes and a select reading by H. C. Lessingwell were followed by ten minutes recess. S. C. Harner, in an essay on "Looking Backward," seemed to think that Mr. Bellamy's scheme would not work in a free country like ours. A. A. Gist skilfully rendered a declamation, entitled "Drifting," after which the Society listened to a spicy *Reporter* by T. E. Wimer, editor. After the usual routine of business, the Society adjourned at 10:30. C. A. C.

SOCIETY HALL, February 7th.
 The Alpha Beta Society was called to order by Pres. Senn. Music, a quartett, "Slow Joe," by Messrs. Hutto, Westgate, Clothier, and Smith. Devotion by J. A. Zimmerman. Roll-call. Society was then organized into a Moot Court for the trial of several cases, with the following officers in charge: Judge, B. H. Pound; Clerk of the Court, J. A. Zimmerman; Deputy Clerk, May Harman; Court Stenographer, Bertha Kimball; Assistant Stenographer, E. P. Smith; Sheriff, J. N. Harner; Deputy Sheriff, J. E. Taylor; Bailiff, R. A. McIlvaine; County Attorney, Sadie Moore. The first case called was J. A. Zimmerman vs. R. E. Walker and W. W. Conner. After some rejection, the following jury was impaneled: R. S. Reed, V. Armour, Nora Newell, Eli Hopkins, Sarah Cottrell, W. Zerkle, Julie Greene, Martha Campbell, May Secret, J. R. Orr. Case opened by the County Attorney, assisted by Lockhart Harman. W. W. Hutto appeared as defense, assisted by Emma Secret. Examination of witnesses, J. B. Harman, E. P. Smith, J. A. Zimmerman, J. E. Taylor, C. Abbot, W. W. Hutto, and W. W. Conner for the prosecution occupied the entire session. Judge adjourned Court till the 14th day of Feb., 1890. S. M.

IONIAN HALL, February 7th.
 The Society was called to order with the hall well filled. After the opening formalities, the programme was opened with an instrumental and vocal duet by Misses Kate Pierce and Alice Vail. Judging from the applause given by the audience, this was much appreciated. This was followed by a select reading, entitled, "The City of the Living," by Effie Gilstrap. Bessie Morrison read an historical essay about the ancient Persians during the rule of the Incas. The *Oracle* was presented by Eusebia Mudge. The frontispiece of the number was a beautiful oil painting. The editorial was a description of Valentine's Day. Among other articles were "Teaching School," a poem, entitled, "The Second-Year Class," and a poem in remembrance of Miss Kittie Spilman. Miss Mary Pierce discussed the question, "Should the Society have discussions as a part of their programme?" Miss Pierce thinks we should, for various reasons, but that this duty should be given to some one else than a "Prep." After this question was discussed to the satisfaction of all, the programme was closed with instrumental music, Julia Pearce playing on the violin, accompanied by Jennie Selby at the organ. After report of committees and transaction of unfinished business, the Society passed to the order of new business. After many remarks, motions, etc., the Society decided not to accept the invitation given them by the Webster Society to unite with the Webster and Alpha Beta Societies to procure a lecturer, but to give an exhibition. The Society will celebrate St. Valentine's Day by having a valentine box. The following are the resolutions adopted by the Society in remembrance of Miss Kittie Spilman:

WHEREAS, Our beloved friend and sister Ionian has been removed from our midst by death; and

WHEREAS, She had been a faithful and valued member of our Society; therefore, be it

Resolved, That we, the members of the Ionian Society of this College, take this means of recognizing the loss we have sustained by her death, and we trust that the memory of her womanly virtues may long be to us a beautiful example; and be it

Resolved, That a copy of these resolutions be published with our weekly Society report, also in the next *Oracle*. M. E. W.

HAMILTON HALL, February 8th.
 Pres. VanBlarcom called the Society to order, Secretary Martin read the names of the members, and R. W. Newman led in prayer. Minutes of the previous meeting were read and adopted. F. Grecian was elected to membership. The first thing on the programme was an essay, "The Story of a Calf," written by C. P. Hartley, and was applauded by the whole audience. F. M. Linscott's essay was the recital of a most fantastic dream. Debate, question, "Is a lawyer justified in defending a bad cause?" W. A. Anderson opened the affirmative. Even the worst criminal should be allowed a defense. If he cannot make it himself, any lawyer who would defend him would be justified. It is better that one hundred guilty men go free than that one innocent man be punished. A lawyer is sworn to defend those who have no counsel. He is justified by custom. A. E. Martin began the negative. He would not allow one hundred criminals to go free to save one innocent man. A true lawyer is one who defends the law. The only reason for defending a bad cause is money, and defending crime for money is guilt no less than the original. The Cronin case has cost over \$50,000 to give a bad cause a chance for defense. G. L. Gilbert cited some instances in favor of the affirmative. J. E. Pierce, in continuing the negative, said: "A lawyer usually knows when his client is guilty. When British soldiers in Boston fired on American citizens, they were tried by British authorities; and having no British attorneys, Samuel Adams defended and cleared them after they had murdered his countrymen. A lawyer's duty gives him no right to disregard justice. He has no right to sell his services for promotion of dishonesty or guilt." Mr. Anderson closed the affirmative. The defense of the Cronin case has allowed an innocent man—Cunze—a new trial. The men upon whom the British fired in Boston were in a mob, and Samuel Adams was justified in defending those who fired upon them. Mr. Martin closed the debate. Lincoln never took a case when he believed his client guilty. The Judges, Messrs. Z. E. Wright, W. J. Yeoman, and R. Snyder, gave a unanimous decision to the negative. G. J. Van Zile spoke an extract from Robert Emmett's speech of vindication. An excellent issue of the *Recorder* was presented by Ralph Snyder. The principal articles were "Lies and Liars," "Running after the Girls," "Chronicles," "A Good Education Pays," H. B. Gilstrap discussed the study of "Robert's Rules of Order." F. R. Smith's discussion was descriptive of an opium den. H. E. Moore, in presenting the news of the week, told of the trouble in the United States House of Representatives and of the newspaper discussions of the Gladstone-Blaine debate. Critic, F. A. Campbell, presented a lengthy report, and the Society adjourned. WAUGH.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

The teachers of Wabaunsee County held a well-attended meeting at Maple Hill, February 2nd.

Twenty-five members of the Arion Singers (German) of Topeka have gone to the "Saengerfest" at New Orleans.

The floral collection in our High School is fine—a grand success. Other schools should try it, too.—*Girard Press*.

Teacher H. G. Larimer of Topeka has presented the Wabaunsee County Teachers' Library with a number of valuable books.

The Washburn *Argo* reports that the gymnasium plan, talked about so enthusiastically a year ago, has died a natural death.

The Baker University folks speak in high terms of the abilities as a performer on the piano of Prof. Karl Preyer, their teacher of instrumental music.

Railroad Commissioner Humphrey has delivered a lecture before the Historical and Political Science Club of the State University on "The Character and Subject of State Control of Railways."

The McPherson *Educator* reports the death of P. T. Lindholm of Lindsborg, formerly Professor of Mathematics at Lindsborg College. He was elected Treasurer of McPherson County in 1886, and was serving his second term at the time of his death.

The District Board of School No. 64, Crawford County, preferred charges against their teacher, George Germain, but the investigations of the Superintendent did not sustain their position. They had charged him with incompetency, negligence, and cruelty. Let there be peace now!

Geo. W. Crane and Co. of Topeka have just finished the printing of a new edition of the General Statutes of Kansas, revised up to date. The work is edited by Irving Taylor of the Topeka bar, and will prove most acceptable, not only to the profession, but the people at large as well.

The Baker University Summer School of Oratory and Elocution will be held this year as in previous years, and will no doubt attract even more attention than it has done in the past. The day of opposition to the artistic in public speaking has gone by, and the value of elocution is recognized, even in the pulpit.

The students of Lane University will soon have uniforms. The *Echoes* says: "At the close of chapel on the 26th, Prof. Mershon addressed the young men on the matter of uniformity of dress. He said that after correspondence with a Philadelphia firm, the Faculty had agreed on a uniform to be adopted by the gentlemen students who may choose to purchase. The cost is \$13.00, the texture is wool, and the color indigo blue."

The Douglas County teachers, at their last meeting, had an animated debate over the question, "In the provision made in the Constitution for the separation of Church and State, does the word Church mean or include Christianity?" It was finally concluded that the word Church does not mean or include Christianity, though a number of teachers held, with United States Supreme Court, that it meant entire liberty of conscience, as long as it came in no absolute contact with the spirit of the Republic.

Lane University advertises a Special Normal, beginning April 1st, i. e., at the opening of the spring term, and closing June 14th, a few days prior to commencement. The studies embrace all needed for a first-grade certificate, and a number in addition. To those completing the normal course creditably, will be given a diploma. The studies may be taken during the Special Normal or at any other time when such branches are taught. The tuition and incidentals for the eleven weeks of the Normal are \$8.00. For information, address President Waller.

Prof. Cragin of Washburn College has recently secured a large "alligator gar" from Indian Territory for the Zoological Museum. It measures about eight feet in length, and three in circumference. This specimen is of that group of fishes known as "ganoids," in allusion to the shining armor of enamel-like plates with which it is clad. It is one of the few survivors of an ancient "generalized" or "prophetic" type which combined

ordinary fishes with those of the amphibians, and which appeared in the palaeozoic division of geologic time, before either of these two classes of animals had assumed their modern aspect. In other words, it illustrates the crude, undifferentiated expression of the fish and the amphibian before these had been evolved as the two distinct ideas realized in the higher members of these groups today. Several of the present and former students of the College and citizens of Topeka contributed toward the purchase of this very interesting specimen.—*Argo*.

CONCISE BUSINESS RULES.

The intelligent and upright business man regulates his conduct by fixed principles and established methods. He is not the creature of impulse or caprice.

1. He is strict in keeping his engagements.
2. He does nothing carelessly or hurriedly.
3. Does n't entrust to others what he can easily do himself.
4. Does n't leave undone what should and can be done.
5. While frank with all, keeps his plans and views largely to himself.
6. Is prompt and decisive in his dealings, and doesn't overtrade.
7. Prefers short credits to long ones, and cash to credit always.
8. Is clear and explicit in his bargains.
9. Does n't leave to memory what should be in writing.
10. Keeps copies of all important letters sent, and files carefully all papers of value.
11. Does n't allow his desk to be littered, but keeps it tidy and well arranged.
12. Aims to keep everything in its proper place.
13. Keeps the details of business well in hand, and under his own eye.
14. Believes that he whose credit is suspected is not to be trusted.
15. Often examines his books, and knows how he stands.
16. Has stated times for balancing his books, and sending out accounts that are due.
17. Never takes money risks that can be avoided, and shuns litigation.
18. Is careful about expenses, and keeps within his income.
19. Does n't postpone until tomorrow what can as well be done today.
20. Is extremely careful about indorsing for anyone.—*St. Louis Grocer*.

PROFIT OR NO PROFIT.

Secretary Mohler of the State Agricultural Department is giving more attention to the sugar industry than to any other subject at the present time. He proposes to get at the facts, and endeavor to give the people the exact condition of industry. That the success of the industry is assured beyond question is not true, but that there is good reason to believe that sugar manufacturing will ultimately be made a success in Kansas is true. Mr. Mohler will demand of the factories which are receiving bounty from the State under the law enacted by the Legislature for the encouragement of the industry that they tell the people just what they are doing. In an interview yesterday with a *Capital* reporter, Mr. Mohler said:

"In an alleged interview of the Secretary of the State Board of Agriculture, I have been made to say that the sugar factories of Kansas have had a successful season this year. That is a mistake. What I did say, and still say, is that the time has come when the people of Kansas demand that the true status of the sugar industry in Kansas shall be made known. If the sugar factories are making no money, the people want to know the reason why. If they are making money, the people want to know how much. This information is expected and required of each factory which puts in a claim for State bounty this year."—*The Capital*.

THE SUGAR INDUSTRY.

The *Kansas Financier*, referring to some apparent misrepresentations of the profits of sugar-making for the sake of obtaining bonds in western counties, adds the following caution: "The diffusion process seems to have a better standing in the opinion of many, as this has given practical results, and the difficulty to be contended with is the question of operation. If this can be solved, it will open a big market to the farmers of the State, as sorghum will grow readily here under fair condi-

tions. Several of the mills making sugar by the diffusion process have made money during the last year, while others have run behind. Under all the circumstances, it would be well for all to wait a little longer before voting more bonds. The industry of making sugar in this State by either of the special processes is yet in the experimental stage, and until experience has proven beyond doubt the certainty of profit-earning to the manufacturer, and a steady market to the cane-grower, it would be wise to make no further debt to build mills.

OUR RAILWAYS.

After carefully revising its figures, the *Railway Age* says it appears that a little more than 5,209 miles of track were laid last year. The aggregate mileage of the country, according to the *Age*, is 161,270, or nearly enough to encircle the planet at the equator six and a half times.

Illinois stands the head of the States of the Union with respect to railroad mileage. It has 10,079 miles. Kansas comes next, with 8,815; Texas next, with 8,494; Iowa next, with 8,455; and Pennsylvania fifth, with 8,417. Kansas is largely indebted for its second position to its great extent from east to west and the fact that it is traversed by Pacific roads.

Illinois ranks in 1890 as it did in 1870, twenty years ago, though its mileage has more than doubled. But Kansas has leaped from the tenth to the second position, and Texas from the twenty-sixth to the third. Iowa has advanced one notch, from fifth to fourth. But Pennsylvania has gone back from second to fifth, New York from third to sixth, and Iowa from fourth to seventh. Michigan was the eighth in 1870 as it is in 1890, but Indiana has dropped from third to ninth. As a rule, and naturally, the greatest growth has been in the West and Southwest, though there has been great increase of mileage in all parts of the country.

Questions for debate in politics and economics have just been published by the Society for Political Education, 330 Pearl Street, New York, as its pamphlet No. XXVIII. In addition, subjects for essays are suggested, and terms for definition are presented. Hints to writers and debaters are given, with a form of constitution and by-laws for debating clubs. The pamphlet covers the groundwork of politics and economics, and states its pressing questions with point. Price, 25 cents.

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GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good reputation. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week-day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

PREVENTION OF SMUT.

BY PROF. W. A. KELLERMAN.

VERY much interest has been manifested in the subject of prevention of smut in oats by the simple use of hot water, experiments in regard to which were published in Bulletin No. 8 of the Experiment Station. In numerous letters received in regard to the same, the inquiry is sometimes made as to whether the Jensen hot-water treatment would likely be successful in combating the smut of wheat. There seems to be no doubt but that all the smuts can be successfully treated in the same manner. Prof. Jensen, of Denmark, has treated various cereals, and in every case he reports success. Not only is the smut prevented, but the germinative power of the grain seems to be increased. In a letter dated January 24th, 1890, he says:

"I have been much interested in reading the account of your experiments in smut in oats which have proved a complete success with my method. My experiments have given quite the same results, viz., absolute disappearance of all smutted ears and, strange to say, an extra augmentation of the crop as compared with that produced from non-prepared seed. Of course, when there is, for instance, six per cent smutted ears in the crop, the avoidance of this would give an augmentation of six per cent in the field; but there was a surplus beyond this point. I suppose that this remarkable fact must be due to a great vegetative energy in the treated seed. I think that a similar augmentation of the crop will be the result of dipping wheat and barley in hot water,—at least my experiments point decidedly in that direction."

Prof. Jensen then details his most recent experiments, with results as before indicated. He informs us that he does not leave the oats in hot water fifteen minutes, as we stated in the Bulletin referred to, but during five minutes only. As our experiments were successful, it is quite certain that an immersion of fifteen minutes in water at a temperature of 132° increases rather than diminishes the germinative power of the seed. However, the labor is somewhat reduced the shorter the time of immersion, and we will this year determine the least time that will yet prove effectual. His method of handling the seed is also slightly different from that followed by us, and therefore another portion of his letter is here quoted:

"We have a boiler for heating the water (instead of water steam may be used), and two vessels, each large enough to contain the hot water in which the seed is to be dipped. In the case of wheat, rye, and oats, the temperature of the water in both vessels should be $133-135^{\circ}$ F. The seed, in portions of one bushel, or even one and a half bushels, is put into a wide cylindrical basket with a flat bottom, and provided with a lid. The basket is lined on the inside with loosely woven linen cloth so that the water may freely enter and fill it at once. In our country, we use a sort called Hessian, or the cloth used in cheese-making. If the cloth will not permit the water to pass easily into and out of the basket, the operation will not succeed. The vessels should be large enough to contain five times the volume of water as the quantity of grain in the basket. In vessel No. I., the basket with the seed is dipped and lifted four times, which ought to be done in about half a minute. During the remaining four and a half minutes, it should be dipped sixteen to twenty times in vessel No. II. Here the temperature will only descend to about $130-132^{\circ}$ F.

"It should be noted that each time the basket ought not to be kept above the water for more than four or five seconds, during which time nearly all the water will run out. At the end of five minutes, one or two buckets of cold water should be

poured on the seed to cool it, after which it should be spread out on the floor to dry. The sacks in which the disinfected seed is to be placed should also be treated with hot water."

THE FOREMAN, AND HIS APPOINTMENT.

BY PROF. F. H. WHITE.

NEVER before has there been so great a demand for men of directive ability—men who can manage others, oversee their work, lay comprehensive plans. The reason is obvious. This is the age of combination, of co-operation, of the massing of men and material. Individual work at home is giving place to the collecting of workmen together in large establishments, and of course there must be intelligent oversight of their labor. The difference between a well-organized enterprise where division of labor is carried to the uttermost, and every department placed under competent foremen, and one in which this is not done, is fully as great as that between an army and a mob.

What are some of the qualities that must be possessed by the one who desires to direct the labor of others, say as the superintendent of an industrial enterprise? First and foremost, a thorough knowledge of human nature. One must have the ability to read between the lines, to guess the unspoken words, to measure the strength of motives, and understand the usual modes of operation of the mind. Of course, a thorough knowledge of the work to be done is absolutely essential. It would be helpful, certainly, if the foreman was the best workman in the shop; for he would be more likely to secure careful attention to orders or suggestions for improvement of methods, if he was the superior of the men in ability, as well as in position. He should also have decision and energy of character. We can hardly conceive of a man who lacks these traits inspiring those about him to great exertions. To plan work ahead, to be able to act promptly and effectively in sudden emergencies, to have a keen eye for unnecessary waste of material or time, to keep the lazy hard at work and encourage the gifted to use their talents,—all these and other qualities that might be mentioned should enter into the make-up of one who leads or directs.

How should leaders, subordinate and superior, be selected? The present plan in large enterprises is for the owner or trustees to appoint the chief officials and allow them directly or indirectly to name their subordinates. Is there a better scheme? Mr. Bellamy, in "Looking Backward," suggests another which of course could only be used in co-operative establishments or in the event of nationalization of industries. We quote from his book:

"The general of the guild appoints to the ranks under him, but he himself is not appointed, but is chosen by suffrage.

"By suffrage!" I exclaimed. "Is not that ruinous to the discipline of the guild, by tempting the candidate to intrigue for the support of the workers under them?"

"So it would be, no doubt," replied Dr. Leete, "if the workers had any suffrage to exercise, or anything to say about the choice. But they have nothing. Just here comes in a peculiarity of our system. The general of the guild is chosen from among the superintendents by the honorary members of the guild; that is, of those who have served their time in the guild and received their discharge."

The scheme of having the honorary members elect the general would apparently work satisfactorily if the voters consented to inaugurate such a system. But why should we expect them to do so? Mr. Bellamy thinks that the germ of the idea, which by

the year 2,000 is to develop into the scheme he proposes, is to be found in the fact that some few higher educational institutions of learning now admit their alumni to a share in the management.

Opposed to this fact, however, are many others that seem to indicate that the workers would not give up to the honorary members of the guild this power to elect officers. Here are a few facts that seem fairly conclusive on this point. The students in some of our higher educational institutions have sought and obtained a share in the management. In the political world, there is an evident tendency to make more and more offices elective; State constitutions, which are of course voted on directly by the people, now contain far more details than in times past; the constituents of a representative are more clamorous than formerly—that he should simply register their will, and not follow his own judgment; the growing sentiment that the President should be elected by popular vote and not by electors,—all these things indicate an increasing desire on the part of the people to do as much of the governing as possible. Is it not unlikely, then, that they would consent to turn over to others the appointment of officials under whom they must work?

But perhaps the question may be raised, Why should the workers not elect their own officers? Mr. Bellamy says it would be ruinous to the discipline of the guild, and we are inclined to agree with him. The fact that the people now elect some of their judges and, of course, a large number of other officials, does not prove that they would be successful in electing men to serve them in the capacity of foreman or superintendent. It is much easier to vote with an unprejudiced mind when one is not directly concerned in the result. How little direct difference it makes, or seems to make, to the average voter whom he elects judge or governor! It is a different matter, however, if the person for whom he votes is to oversee his work, make it lighter or heavier, increase or diminish his chances for promotion,—in short, to favor or frown on him.

No doubt the time will come when men will be willing to give up their personal, selfish interests for the general good, but we are inclined to think that quite a number of generations must come and go before that stage of development is reached. Meanwhile, the majority will have to remain content with the present system; though a certain number, having obtained sufficient self-control and other necessary qualities, will probably be able to carry on co-operative enterprises and elect their own officers with success.

ITEMS ON HOUSEWORK.

Good housekeeping consists in continual care for small things, which in themselves are nothing, but in the total make up the comfort of home life. It is a simple matter to see that all the house stores are kept on hand, that each match-box about the premises is filled, that every room has a convenient receptacle for matches and one for burned matches. Yet the neglect of so trifling a matter may cause some one, hunting in the dark for a match, an enormous amount of annoyance. A good supply of nice brown papers laid away carefully, and a bag or box containing different kinds of twine, cost a housekeeper nothing, as they may be saved from parcels; yet such a habit will find ready appreciation when some one is in need of paper and string to tie up a parcel. There is nothing so unsightly as an old newspaper for such a purpose. There are so many good uses that old newspapers can be put to, that brown paper should be always kept on hand to wrap up parcels. There is nothing better than old newspapers under a carpet to soften the tread and keep the hard floor from wearing out the carpet. There seems to be some ingredient in the printer's ink that drives away moths, and for that reason newspapers are better than anything else to wrap up furs and woolens during the summer. They should never be destroyed after they are read unless used for kindling, but should be kept in a straight pile. It

is a wise precaution to keep a roll of old linen, one of old cotton, and needles and thread in the kitchen drawer where it can be readily found in case of a burn or cut. A step-ladder on hand to reach to high places saves a great deal of trouble. A step-ladder table, which may be covered when not in use, or a wooden-seated chair should be on every floor, except the kitchen floor, where the ceilings are usually so low that any high place can be reached by standing on the kitchen chairs, which are always, or should be, made with wooden seats that may be scrubbed and washed. All these matters are small, but a series of petty vexations are more liable to irritate the temper of genuine merit.—*The New York Tribune*.

PROSPECTS FOR CATTLE-RAISING.

While it may look like flying in the face of fact and figures to assert anything encouraging in the cattle business at present status, the signs are in every way encouraging. There is no class of stock that responds more liberally for feed and care than cattle; no class of stock that have built up more fortunes, made more prosperous farmers. Indeed, I can think of no wealthy farmer in my vicinity but who, directly or indirectly, laid the foundation of his prosperity in cattle, while the fortunes of our bonanza ranchmen are proverbial. It is said, with all probability of truth, that on our free western range a steer may be fitted for shipping at an outlay of only \$1, including salt and herder hire! All grass, both tame and wild, all fodder otherwise going to waste, and the unsightly straw stacks can be converted into money through cattle as with no other animal.

The regular farmer may not be able to get his cattle to market for a dollar per head, but the margin of profit is liberal usually—even perceptible at prevailing rates. The present inlook of cattle, I must repeat again, is far more foreboding than the outlook, if rightly looked into. The present disastrous prices are wholly owing to the breaking up of the great herds of the western plains, consequent upon being driven off of the Government lands. These herds were too large to be dispersed in a month, in a year, or even in three years. The fruit of Government action three years ago is now just ripening. The older feeders gone, it is the "tailings" of these great droves that have swamped our cattle market. These, we have it on good authority, are practically exhausted, and we may look for not only fair, but even good prices in the immediate future.—*Prize Essay in Western Agriculturist*.

OUR HOG PRODUCTS.

Swine will always be a conspicuous feature in agriculture. There is a steady consumption of pork products. We are a pork-eating people. Upon every table, there is more or less pork in some shape, and upon every table there are pork products of some kind constantly. The consumption, therefore, is reliable. But, further than this, on many tables pork is the chief meat the year round. Then the production of pork is about as cheap as any meats that we produce. The hog consumes considerable that would be otherwise wasted; and when corn is high, the price of pork usually corresponds. We may confidently depend upon our swine, therefore, to do as well, years together, as any other domestic animal will do. Disease has been the great drawback to our swine husbandry, but we believe that the avoidance of too close inbreeding, and a more natural system of feeding, will protect us from disease in a very large measure.—*Western Rural*.

Steady work for the love of it, and for the satisfaction and peace which it brings, never breaks the worker down. On the contrary, it so weakens temptation from without, and so destroys inferior ambitions and desires, that it gives the whole nature steadiness and poise. It is the best cure for restlessness. The joy of life for strong nature lies in a noble activity; a work adequate to the aspirations of the soul; a work that brings calm by its magnitude, and by its very demand evokes the best and greatest in us.—*Rural New Yorker*.

The one serviceable, safe, certain, remunerative, attainable quality in every study and every pursuit is the quality of attention. My own invention, or imagination, such as it is, I can most truthfully assure you, would never have served me as it has but for the habit of commonplace, humble, patient, daily, toiling, drudging attention.—*Chas. Dickens*.

KANSAS THRIFT.

The people of Ness City have taken steps towards securing, at that place, the erection of a paper mill.

"Hogs and alfalfa will be my chief farming operations this season and next," said a prominent farmer to us the other day. From all we can learn it looks as though Kearney County will raise a big surplus of hogs during the next season.—*Kearney Advocate*.

The owners of the anthracite coal mine at Alma are down 600 feet and have a thousand feet yet to go before reaching the six-foot vein. They say that by September they expect to supply Kansas people with the very finest quality of hard coal at \$3 per ton.

Arrangements have been completed under which the large foundry and machine shops at Zanesville, O., known as the Duval Engine Works, are to be removed to Emporia. In some respects, they will be the largest works of the kind west of the Mississippi River.

Lee W. McKinney raised seventy-eight bushels of alfalfa seed on ten acres of land. He sold it to Tom Mitchell at \$3.00 per bushel. The seed had laid out in the rain and become slightly damaged. He also raised on his farm last summer eight hundred bushels of oats on ten acres of land.—*Garden City Herald*.

In taking a drive over this county this week, we found quite a number of our farmers turning the soil in fine shape, and we were informed that the ground is now in better condition for ploughing (having had such heavy fall rains) than it has been at any time previous, and the present prospect for crops the coming season is very flattering.—*Johnston City Republic*.

The agricultural possibilities of Kansas embrace practically everything that is grown on American soil—all the cereal and root crops, all the fruits and berries, the great clothing staples of wool, silk, cotton, and flax. Salt enough to supply the world indefinitely lies just beneath the surface, and we raise live-stock enough to supply the nation with meat, food, and leather for all its needs.—*Kansas City Gazette*.

A Kansan by the name of Gillock, living near Hutchinson, three years ago made a fish pond covering an acre of ground, and stocked it with German carp. He is now selling about 400 pounds of fish per month at four to eight cents per pound. He estimates the product of his fish pond at about 3,000 pounds, worth \$350. Fish-raiser Gillock thinks that others may continue to raise corn at fifteen cents a bushel if they so desire.

Probably no county in Kansas has taken more pains and expense to improve its horses than Marshall County. The very best specimens of the different breeds have been imported, and while some of the horsemen have lost money, yet the result has been that we now have some of the finest horses in the world. Kansas City, Boston, New York, and other eastern points are represented here by horse buyers, who know good stock when they see it, and who are all eager to secure enough for their trade.—*Marysville Democrat*.

E. Armitage, of Kalamazoo, Michigan, is looking for a celery farm. He has spent a number of years in that business in Michigan, and says he is well satisfied celery will grow here as well as in Michigan, and that Southern Kansas will soon become as noted for celery as any spot in his native State. He will look around for several days, and as he expresses it, he intends to buy a farm and engage in the business. There is considerable labor connected with the business, calling for a number of employes, which is regarded as lending importance to the fact that Mr. Armitage intends to locate here.—*Wichita Eagle*.

Undoubtedly the finest shipment of horses that ever left Shawnee County started for Denver, consigned to the great combination sale to take place there soon. There were two carloads, of eighteen head each. Charles Wolff, G. M. Kellogg, E. G. Moore, Charles Robertson, Dr. Redden, and other breeders of Shawnee County were contributors to the lot. Such sires as Harry McGregor, Young Waverly, Coriander, Woodford, and Fergus McGregor were represented, each with first-class colts. Kansas is rapidly taking a front rank in this line of industry, and the samples in this consignment would be a credit to the blue-grass regions of Kentucky.—*Topeka Capital*.

CALENDAR.

1889-90.
Fall Term—September 12th to December 20th.
Winter Term—January 7th to March 28th.
Spring Term—March 31st to June 11th.
June 11th, Commencement.
1890-91.
Fall Term—September 11th to December 19th.

TO SCHOOL OFFICERS.

The College Loan Commissioner has funds to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioners and the State Agricultural College. Address Jno. E. Hessian, Loan Commissioner, Manhattan, Kan.

LOCAL MATTERS.

The Ionian Society will give an exhibition on Friday, April 25th.

Miss Ora Wells, Third-year, has had a visit from her mother this week.

Prof. Olin attended the meeting of the Grand Lodge at Salina on Thursday.

H. V. Rudy, Third-year student, is in classes again after six weeks' of sickness from pneumonia.

Mrs. Agnes Fairchild Kirshner is visiting at her old home this week. Mr. Kirshner is expected today.

Prof. Popenoe is attending the annual meeting of the American Horticultural Society at Austin, Texas.

Students C. A. Campbell, W. W. Hutto, and Lottie Short attended the oratorical contest at Lawrence.

A pleasant party was given at Prof. and Mrs. Walters' residence on Friday evening in honor of their daughter Hulda.

Prof. Brown was detained at Leavenworth this week until Wednesday by return of the sore throat attending influenza.

Mrs. Tunnell, of Manhattan, with her guests, Mrs. Root and Mrs. Taylor, of Kansas City, Kansas, attended the public exercises yesterday.

Mr. Sharpe, of Topeka, called at the College on Thursday in company with his brother, Eld. E. O. Sharpe, of the Christian Church, Manhattan.

At the meeting of the Inter-Collegiate Athletic Association, held at Lawrence, last week, W. W. Hutto, Third-year student, was elected Treasurer.

Professors Graham and Georgeson went to Institutes at Russell on Thursday, and at Hays City on Friday, Prof. Olin joining at the last named place.

Mrs. Winchip has been kept all the week at the bedside of her father, Mr. Newman, who is suffering since last week Friday under a second attack of paralysis, and is not expected to live.

Professors Walters and Lantz and Mrs. Kedzie report an enthusiastic meeting of farmers and their friends at Girard, last week, the attendance varying from 250 at the afternoon sessions to 700 at the evening meetings.

Mr. Wm. Becker, editor of the Marysville *Free Press*, called this morning on his return from the session of the Grand Lodge, Sons of Hermann, at Wichita, and enjoyed his first visit in an inspection of grounds and buildings under guide of Prof. Walters.

Senator Joel Moody, of Mound City, was a guest of President Fairchild for a few hours yesterday while discussing the codification of laws as to the Educational Institutions of the State. Senator Moody represents the Senate Committee on Codification.

Mr. D. W. March, agent of the Pacific Express Co. at Manhattan, has the thanks of the College for a manuscript copy of rates to or from Topeka, Kansas City, St. Joseph, St. Louis, Chicago, Washington, Philadelphia, Baltimore, New York, and Boston, in convenient form for ready reference.

A letter from Prof. Shelton to his brother, under date of January 28th, the day after the steamer crossed the Equator, describes the journey from Honolulu as delightful. "The southeast trades blow steadily night and day; the sea is always moving, but never rough; the sun shines almost without interruption, and the air is, beyond expression, delicious." He hoped to reach Sidney on February 8th.

The first division of the Third-year Class appeared in chapel yesterday afternoon in their first public orations. The speakers were: W. A. Anderson, "Strength and Endurance of National

Feeling;" W. S. Arbuthnot, "The Philanthropic Movement of this Century;" Irene Bridgman, "Physical Culture, Ultimately Soul Culture;" H. W. Avery, "A Solution of the Race Problem;" R. J. Brock, "Benjamin Franklin as a Diplomat;" C. A. Campbell, "An Unknown Man;" E. C. Coburn, "Our Fast Mails, and What They Mean."

The winter term Social called together last evening, in spite of cold and snow, nearly five hundred people of all ages, the invitations being restricted to officers and their families, students and their parents, and graduates. The brief entertainment in the chapel consisted in a presentation to Father Time by the old year, 1889, of the successive months. Each month was represented by a grown person and a child, dressed in costume to suggest the ideas appropriate to a song or a speech, describing the month. The social sequence to the entertainment kept the young folks busy, while the old folks looked on in admiration of youthful gayety.

Prof. White lectured in the Chapel, Friday of last week, on the subject, "Freedom: Its Nature and Development." He first showed by a number of illustrations that the modern man possesses much more freedom than did his primitive ancestors, because he is, to a certain extent, master of his environment. Every discovery of physical science opened new fields for his activities. Next, he discussed the relation of man to his fellowmen, claiming that co-operation, the willingness to work with others for the general good, was essential to his highest development and perfect freedom. Finally, the Professor spoke of freedom of the inner self, saying that it was conditioned on the possession of a mind thoroughly trained and freed from prejudice, superstitions, and unreasonable desires. To the extent that a man was living in harmony with God, in sympathy with man, and was master of himself and his surroundings, he was free.

GRADUATES AND FORMER STUDENTS.

W. D. Baird, student of last year, was married on February 2nd, at Leflore, I. T., to Miss Dovie Harris.

H. F. Roberts, Third-year in 1887-88, is editor-in-chief of the *Kansan*, the new paper at the University.

H. C. Tillotson, student in 1887-88, now mail agent on the route over the Missouri Pacific from Atchison to Stockton, visited friends at the College this week.

S. I. Thackrey, student in 1885-86, visited the College on Friday, in company with his cousin, J. W. Thackrey, of Lockridge, Iowa, who, being an operator at that place, took special interest in the Telegraph Department. Mr. S. I. Thackrey is teaching the Ashland School.

Mr. J. E. Williamson, student at various times from 1874 to 1877, visited the College on Tuesday especially to study the stock and the silos with reference to his own farm in Greenwood County. Mr. Williamson found familiar faces among the Faculty in Prof. Failyer and Mrs. Kedzie, who were students with him in the long ago.

A letter from Lieut. E. A. Helmick, Third-year in 1883, announces his arrival at Fort Spokane with Mrs. Helmick (Lizzie A. Clarke, Second-year in 1883), after a pleasant journey via Panama. J. G. Harbord, '86, he says, "fills the position of Post Sergeant Major, the highest ranking non-commissioned officer." He certainly has the best wishes of all, officers and men alike, and his success is seemingly assured.

COLLEGE BUSINESS.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. Applications for extension of time on land contracts should be sent to the Secretary of the Board of Regents, at Manhattan.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Kellerman, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study or work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

Applications for Farmers' Institutes should be addressed, as early in the season as possible, to the President.

The Experiment Station should be addressed through the Director.

COLLEGE SOCIETIES.

Scientific Club.—President, O. P. Hood; Vice-President, J. T. Willard; Secretary, A. A. Mills; Treasurer, Abbie Marlatt; Board of Directors—J. B. Walters, J. F. Morrison, and O. E. Olin. Meets in Chemical Laboratory on the fourth Friday evening of each month.

Webster Society.—President, G. E. Stoker; Vice-President, S. C. Harner; Recording Secretary, H. W. Avery; Corresponding Secretary, C. A. Campbell; Treasurer, J. W. Ijams; Critic, W. T. Swingle; Marshal, B. H. Pugh. Board of Directors—G. E. Stoker, J. A. Davis, C. A. Campbell, W. S. Arbuthnot, S. N. Chaffee. Meets Saturday evening at half-past seven o'clock.

Alpha Beta Society.—President, Marie B. Senn; Vice-President, W. W. Hutto; Recording Secretary, Delpha Hoop; Corresponding Secretary, Sadie Moore; Treasurer, J. N. Harner; Marshal, P. E. Westgate; Director, V. O. Armour; Critic, May Harman. Meets Friday afternoon at three o'clock.

Hamilton Society.—President, S. VanBlarcom; Vice-President, A. K. Midgley; Recording Secretary, A. E. Martin; Corresponding Secretary, F. A. Waugh; Treasurer, G. W. Wildin; Critic, F. A. Campbell; Marshal, R. W. Newman. Board of Directors—A. F. Cranston, F. A. Waugh, F. A. Campbell, U. G. Balderston, C. P. Hartley. Meets Saturday evening at half-past seven o'clock.

Ionian Society.—President, Julia Pearce; Vice-President, Doris Kinney; Recording Secretary, Lottie Short; Corresponding Secretary, Maude Whitney; Treasurer, Myrtle Harrington; Marshal, Kate Pierce; Critic, Fanny Waugh. Board of Directors—Effie Gilstrap, Phoebe Turner, and Alice Vail. Meets Friday afternoon at 3 o'clock.

Young Men's Christian Association.—President, W. H. Sanders; Vice-President, V. O. Armour; Recording Secretary, H. B. Gilstrap; Corresponding Secretary, R. W. Newman; Treasurer, H. Darnell. Meets in Horticultural Hall Sunday afternoon at three o'clock.

Young Women's Christian Association.—President, Christine Corlett; Vice-President, Ora R. Wells; Recording Secretary, Callie Conwell; Corresponding Secretary, Ava Hamill; Treasurer, Sarah Cotrell. Meets Tuesday morning at eight o'clock in Society Hall..

SOCIETY HALL, February 15th.

The Webster Society was called to order by Pres. Stoker. Prayer by B. H. Pugh was followed by the inauguration of E. R. Burts as a member of the Board of Directors in place of S. N. Chaffee, who has left College. Messrs. Wm. Brown and A. Dickens were elected members of the Society, and the latter was initiated. Debate, question, "Resolved, That high protection is not beneficial to the people of the United States." The affirmative speakers were Messrs. T. C. Davis and G. K. Helder; the negative, Messrs. J. W. Ijams and E. R. Curtis. The Society decided by vote in favor of the negative after able discussions on both sides. A declamation by J. Frost, was followed by an essay on Plato's "Immortality," by W. H. Edelblute. A declamation by T. E. McLeavy, on "Washington," was listened to with much interest, after which W. S. Arbuthnot presented an essay on "Originality," which showed to advantage the originality of the writer. Reading, by Wm. Town, was followed by a discussion by F. C. Holcomb on "The Dairy Business." A new feature of the Society work is the report of a "Newsman" whose duty it is to give, in a condensed form, the news of the past week. J. N. Bridgeman, in that capacity, held the attention of the members by his original presentation of the current events. After the usual round of business, the Society adjourned. The Corresponding Secretary not being present, it has been, therefore, impossible to give a full account of the session. C. A. C.

SOCIETY HALL, February 14th.

The Alpha Beta Society was called to order by Pres. Senn. First was music, a beautiful quartette, by Ella Hopkins, Delpha Hoop, E. P. Smith, and P. E. Westgate, "Some Day I'll Wander Back Again," Maud Parker, organist, Birdie Secret, Committee. Devotion, V. Armour. Roll-call. The rules were then suspended, and the Society organized into a Moot Court. The case of J. A. Zimmerman, plaintiff, vs. R. E. Walker and W. W. Conner, charged with cutting a telegraph line, was continued from the last session of court. Sadie Moore, as County Attorney, was assisted by Lockhart Harman; G. L. Clothier, assisted by Emma Secret, for the defense. H. P. Walter and R. E. Walker were called to the witness stand by the prosecution. W. W. Conner, R. E. Walker, J. A. Zimmerman, E. P. Smith, and L. P. Walter were examined as witnesses for the defense. Much time was consumed in questioning and cross-questioning witnesses. The Judge dismissed court for ten minutes recess after charging the Jury to hold no intercourse with any one on the subject. At the expiration of the time, court was again convened. J. N. Harner, as Sheriff, was called to the witness stand and examined. As the hour was late, the attorneys decided to submit the case to the Jury without a plea. The Judge gave his final charge to the Jury, and they were conducted from the room by the Sheriff. Court was then adjourned, and extemporaneous speaking was the next in the order of exercises. The Jury's appearance was followed by a motion to adjourn and return to Moot Court. The Judge then called for the decision of the Jury when Mr. Thayer, as foreman, rose and returned the verdict of "not guilty." The verdict was met by applause, while the faces of the prisoners were radiant. Attorneys Clothier and Secret, in anticipation of the fee they had jointly won, consisting of one stick of chewing gum, one prize box candy, one apple, one banana, one orange, and one cigar, were seen to turn and shake the prisoners heartily by the hand, while the County Attorney and assistant looked moodily upon the scene, musing on "the fish I didn't catch." S. M.

HAMILTON HALL, February 15th.

The Society was called to order by Pres. VanBlarcom. After roll-call, prayer was offered by H. B. Gilstrap. The minutes of the previous meeting being read and adopted, the Society proceeded to the election of G. C. Seymour as a member. The programme of the evening was opened by music, conducted by Ebenezer Blachley. C. J. Peterson read an essay upon "The Importance of Thought." Frank Yeoman did credit to himself in rendering a declamation, entitled "An Adoration." "Was Jeff. Davis Loyal to the Confederacy?" was the question for debate. T. E. Town argued on the affirmative, that in the whole career of Mr. Davis as a soldier and a statesman, his conduct toward the South was that of unrivaled loyalty and patriotism. In the Mexican War, he proved himself brave man, ever courageous and true to the cause which he espoused. Throughout the Rebellion, his whole ambition was manifested in the welfare of the South; and had the South achieved the victory, Jeff. Davis would have been a mighty leader; but as it was, he took, as his lot, the burden of the blame. The imposing scene of his funeral bore witness that his people loved him in life, and mourned his death. E. C. Coburn, in supporting the negative, stated that in the organization of his staff, Mr. Davis showed his disloyalty by choosing as his officers, his friends, irrespective of character or ability, merely because they were his friends. Being himself a graduate of West Point, he refused to hear the advice of abler and more experienced men. He appointed Hood in the place of Johnson, not because Hood was a better officer, but because he was his friend. He was conceded, and he had his way; he was ambitious, and the South reaped the harvest of his ambition. Mr. Town was assisted on the affirmative by F. Thackrey; Mr. Coburn, on the negative, by J. Lamm. The Judges, Messrs. E. M. Paddleford, A. A. Mills, and H. E. Moore, rendered their decision unanimously in favor of the affirmative. After a recess of ten minutes, Mr. Beech gave a select reading. Vocal music, furnished by Messrs. Paddleford, Gilstrap, Blachley, and Anderson, "Formation of Mines" was the subject of G. V. Johnson's discussion. W. H. Rhodes described the Mammoth Cave. In presenting the news of the week, Mr. Borton mentioned, among other things, the death of Mr. Blaine's daughter an extraordinary volcanic eruption in Japan, the probable admission of Wyoming as a State, and Queen Victoria's speech in Parliament on the Irish question. The name of A. C. Scarlett was proposed for membership. After the usual festivities of unfinished and new business, the Society listened to the assignment to duty, entertained the Critic's report, and then adjourned. VANZILE.

SOCIETY HALL, Feb. 14th.

After the Ionian Society was called to order by President Pearce, the programme was opened by an instrumental solo by Maude Whitney. The audience was then entertained by Susie Hall, who read a selection from Washington Irving. Following this was a declamation, entitled, "Energy of Character," which was well delivered by Maude Knickerbocker. The motto of the *Oracle*, which was presented by Effie Gilstrap, was "Youth no obstacle to greatness." One of the interesting contributions was a description of an insane asylum in one of the Rocky Mountain States. A song by Alice Vail, Doris Kinney, and Flora Wiest preceded debate of the question, "Resolved, That military drill should be introduced into the Kansas State Agricultural College as a part of the required course for ladies." Fannie Waugh, the first speaker on the affirmative, based her argument on the following points: Physical development: to be strong in mind, one must be strong in body; and to accomplish this end, we need regular and systematic exercise. Drill exercises teach us to be graceful walk-

ers, and gives us perfect control over our bodies. It is a great step toward dress reform, and also toward woman suffrage. The nineteenth century girl wants something besides the frivolous round of parties and balls, and is going to develop herself physically. The Minnesota University makes drill for girls compulsory, also an eastern college. Healthy people are always happy. A girl has greater influence over her brother if she is skilled in what he calls accomplishments. Tactics teach us to concentrate our minds, keep still, think "like lightning," and execute with care and promptness. The first speaker on the negative side of the question was Alice Vail, who argued that military drill is a good exercise, but as the principal argument in favor of introducing drill for girls, it is a very weak one. A gymnasium would promote a much more perfect physical development. Young men have drill so that in case of war they may be prepared to defend their country. Girls will not be expected or allowed to take up arms in case of such an event. If military tactics were introduced into our College, we would have to study military science and copy lectures. These would be of no use to us in any of our work. A comparison was made between "The Manhattan Rifles" and an established drill. Although the Judges decided two to one in favor of the affirmative, the negative speakers did well their part. After a vocal duet by Misses Doris Kinney and Alice Vail, the valentine box was opened, which created much amusement. Attention being paid to the business, etc., the Society, after listening to an instrumental solo by Lizzie Meyers, adjourned.

MAUDE WHITNEY.

MEANS OF ILLUSTRATION.

Agriculture.—Two farms of 215 and 100 acres, for the most part surrounded by durable stone walls, subdivided into fields of variable size to suit the system of management.

A large variety of standard grains and forage crops in cultivation in fields and experimental plots.

A barn 50 by 75 feet, expressly arranged for experimental uses; and connected with it a general-purpose barn, 48 by 96 feet, for grain, hay, horses, and cattle. Both buildings are of stone, and are provided with steam power, and equipped with improved machinery for shelling, grinding, threshing, cutting for the silo, and steaming.

Two piggeries, one of ten pens for experimental uses, and one of six pens, with separate yards, for general purposes.

An implement house 22 by 50 feet, of two stories, and corn cribs. Shorthorn, Aberdeen-Angus, Hereford, and Jersey cattle; Berkshire and Poland-China swine.

Farm implements of improved patterns.

Collections of grains, grasses, and forage plants.

Buildings, stock, and equipments are valued at \$25,000.

Horticulture and Entomology.—Orchards containing 275 varieties of apples, 50 of peaches, 16 of plums, 20 of cherries, and 10 of apricots.

Small-fruit garden, with 200 varieties of small fruit, including blackberries, raspberries, gooseberries, currants, and strawberries; and vineyard, with 75 varieties of grapes.

Forest plantation of twelve acres, containing twenty varieties of from ten to fifteen years' growth.

Ornamental grounds, set with a variety of evergreens and deciduous trees. Sample rows, containing about 150 varieties of ornamental and useful shrubs and trees, labeled.

Vegetable garden, with hot-beds and cold-frames and experimental beds. Practice rows for students' budding, grafting, cultivating, and pruning.

Two well-planned and furnished greenhouses of three rooms each, stocked with a collection of native and exotic plants.

Museum, containing a collection of woods from American forests, and a large series of specimens in economic and general entomology. Value of property, exclusive of orchards and grounds, \$11,500.

Chemistry and Mineralogy.—Eight rooms, fitted with tables and apparatus for class of eighty students in qualitative analysis, sixteen in quantitative analysis, including necessary facilities for assaying, with a mineralogical collection and general illustrative apparatus. Value, exclusive of building, \$7,500.

Botany.—A general herbarium, consisting of a large collection of plants of the United States and other countries; a Kansas herbarium, containing specimens illustrating the distribution and variation of plants throughout the State; also twenty-one compound microscopes, three dissecting microscopes, tools, reagents, wall-charts, etc. Valued at \$2,500.

Geology, Zoology, and Veterinary Science.—A general museum well fitted with cases containing valuable collections of mounted Kansas mammals and birds, with mounted skeletons of wild and domestic animals. The largest collection of Kansas fishes and molluscs in the State. Kansas reptiles and batrachians, salt-water fishes and invertebrates in alcohol. Collections of Mound-builders' and Indian relics, Kansas fossils and rocks, typical of the geological ages found in the State.

In Veterinary Science: A laboratory fitted with apparatus and reagents, for the study of disease. A collection of charts, models, and anatomical preparations, illustrating healthy and diseased structure. Value, \$4,500.

Drawing.—Models, plaster-casts, patterns, charts, easels, and implements. Valued at \$1,400.

Physics.—Physical apparatus, meteorological instruments, etc. Edelman's dynamo electric machine, with numerous accessories, sling psychrometer, and anemometer. The value of the whole is \$2,000.

Mathematics and Surveying.—Transits, compasses, levels, chains, models, etc. Valued at \$1,000.

Mechanics and Engineering.—Carpenter shop, with separate benches and tools for forty-five students in each class, besides lathes, mortising machine, circular saws, band saws, planer, friezer, boring machine, grinder, and general chest of tools for fine work. Power furnished by a ten-horse-power Atlas engine.

Shops for iron work, with forges, vises, drills, etc. Testing machine, charts, and models.

Inventory of material and apparatus in both shops, \$5,500.

Kitchen Laboratory, with ranges, cooking utensils, dining-room furnishings, dairy furniture; valued at \$500.

Printing.—Office, with thirty pairs of cases, large fonts of six point, eight-point, ten-point, and eleven-point Roman type; a good assortment of job type and brass rule; a Babcock cylinder press with steam power, a Gordon job press; a mitering machine, a rule curving machine, and a paper cutter. Value of equipment, \$3,500.

Telegraphy.—Office, with five miles of line, connecting twenty branch offices, and as many instruments. Inventory, \$1,000.

Sewing Rooms, with six machines, models, patterns, and cases, worth \$550.

Music Rooms, with four pianos, four organs, and other instruments; valued at \$1,500.

A Library, carefully selected and catalogued, containing over 9,000 bound volumes, and 2,500 pamphlets. A reading-room is maintained in connection with the library, where may be found on file forty-five of the leading literary, scientific, technical, and agricultural periodicals, and several hundred newspapers, including the principal daily and county papers from all parts of the State. Value of library, \$15,000.

Armory, containing one hundred and fifty stands of arms (breach-loading cadet rifles, caliber .45), with accoutrements; two three-inch rifled guns; also swords, uniforms, etc. Value, exclusive of arms, \$800.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

Lane University has added a number of first-class periodicals to the list of last year's reading table.

The teachers of Kansas City, Kan., will hold their next monthly institute in the High School building, Saturday, March 8th.

Prof. Samuel Weir has resigned the Chair of Ancient Languages in the Southwest Kansas College at Winfield, to become Pastor of College Hill M. E. Church of Winfield.

The Shawnee County teachers have tried the experiment of having, at each monthly meeting, a paper on "Books that have helped me," and report it a great success thus far.

The public library of Atchison has been presented, by Mr. Geo. Starcher, with a life-size bust of John Brown, a copy of those in the State University, the Normal School, and this College.

The many friends in Kansas of Professor and Mrs. Williamson, formerly of Topeka and now at Fairfield, Ia., will be pained to learn of the death of their little boy, Joe, aged 8 months and 23 days.

The State Oratorical Association has elected the following officers for the ensuing year: President, J. W. Carrington of Emporia; Vice-President, W. E. Curry of Lawrence; Secretary, C. R. Burch of Salina; Manager, H. D. Tucker of Emporia. The next contest will be held at Emporia.

Axtell will soon have a library. The *Anchor* says: "Through the energy and perseverance of the pupils and teachers of our schools, a good start has been made towards procuring a public library, to which a large addition is to be made by the proceeds of the young folks' dramatic club. The School Board has concluded to engage in this laudable enterprise by putting in two handsome book cases in which to keep the books."

The Methodist Protestant University is practically assured for Kansas City, Kansas. It has been understood that the church authorities thought that they should have aid to the amount of about \$100,000 in land. The committee appointed by the Board of Trade last week, to solicit subscriptions, have secured practically sufficient to make the amount. This fills an important deficiency in the elements contributing to make that portion of the city in Kansas.—*Kansas City Gazette*.

The seventh annual contest of the Kansas Oratorical Association took place Friday night, Feb. 14th, in the chapel of the State University. The decision of the judges gave W. S. Naylor, of Washburn College, first place; E. W. Hill, of Baker University, second; and Harvey F. M. Bear, of the State University, third place. There were seven contestants, and all did well. Comparing the notes of the six judges, it is no wonder that the audience differed in their preferences. The delegations of several of the contesting institutions had come to Lawrence in special cars and with banners flying. The official part of the programme was followed by a grand ball in the City Hall Armory.

Rev. D. C. Milner of Manhattan reports bright prospects for the Chautauqua Assembly to be held at Ottawa June 17th to 22nd, of which he is President. Dr. Hurlburt continues as Superintendent of Instruction. Dr. H. A. Palmer will be Musical Director, and there will be special musical attractions. Prof. Holmes will teach one of the Normal classes. Dr. Arthur T. Pierson is expected to conduct the minister's institute. Among the lecturers, will be Dr. Gunsemius, R. H. Connell, George W. Weller, George C. Larimer, G. W. Bair, Prof. McClintock, and the noted colored orator, J. C. Price. Leland J. Power, the noted impersonator, is engaged, and the prospects are that there will be other engagements of distinguished persons. The Executive Committee are determined to make the Assembly even more of a success than that of last year.

While at Girard, last week, attending the Farmers' Institute, we found time to visit the High School and shake hands with the Superintendent, Prof. G. W. Martin, and some of his collaborators. The recitations we heard and everything we saw made a very favorable impression. The pupils were bright, clean, uncommonly well dressed for a country town, and the building and apparatus well preserved, not a scratch being visible on any of the walls or wainscoting. Mr. D. H. Calvin, the janitor, kindly showed and explained to us the

heating apparatus. It is of the conduit pattern, serving also to ventilate the dry-vaults located in the basement. The only thing which we would criticise is the arrangement of the desks of the two west rooms in regard to the light. The desks in these rooms should face north instead of east. Girard can be proud of its public schools.

President Canfield of the National Educational Association announces the completion of the general and department programmes for the great St. Paul meeting in July. Nearly a hundred papers and addresses will be presented, each followed by appropriate discussions. The names of the participants show an aggregation of educational experience, ability, and reputation rarely equaled in any similar gathering in the world. The subjects of industrial education, manual training, kindergarten work, and art and music receive special attention. There will be a discussion of the race problem, carried by such men as Hon. A. Gunby of Louisiana, Senator Henry W. Blair of New Hampshire, and President Pierce of Livingston College North Carolina, and head of the Afro-American league. The proposed international educational congress and exhibition will be discussed.

EXPENSES.

Tuition is free, and no general fee for incidental or contingent expenses is charged. In a few special departments of instruction, the following payments are made in advance to the Secretary:

In the term of Analytical Chemistry, students pay \$3 for the chemicals and apparatus used in their laboratory practice and analysis.

In the Printing Office, young men, in their first year, pay \$3 a term for office expenses. Advanced students have the use of the office for the work performed during the industrial hours.

In Telegraphy, young men pay \$3 a term for office expenses.

Young women are furnished both Printing and Telegraphy free of expense, these two offices, with the Sewing and Cooking Departments, being provided especially for their industrial training.

Lessons in instrumental music—two a week—are from \$10 to \$20 a term, according to its length; one a week, \$6 to \$8.40. One-half is to be paid to the instructor in charge with the first lesson, the other half at the middle of the term.

The cost of text-books at the book stores is, for the first year, about \$4 a term; for the second year, \$2.75 a term; for the third year, \$7 a term; and for the fourth year, \$5.50 a term.

The expenses for apparatus and tools to each student during the course are as follows: Drawing, \$3.50; microscope for Botany and Entomology, \$1.50; case, pins, etc., for Entomology, \$2.25; rules, in carpentry 25 cents, printing 25 cents. The total expense for these articles during the four years is less than ten dollars.

Board and washing are not furnished by the College. Board, with furnished rooms, can be procured in private families at from \$4.75 to \$4 per week. Some students board themselves at even less cost; and rooms for the purpose can be obtained at a rent of from \$1 to \$3.50 a month. Washing costs from 50c. to \$1 a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$100 to \$200 a year.

INDUSTRIAL TRAINING.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have Farming, Gardening and Fruit-growing, Carpentry, Cabinet-making, Iron-work, Printing, or Telegraphy. Young women may take Sewing, Printing, Telegraphy, Floriculture, or Music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second year and the fall term of the third year, upon the farm, gardens, and orchards. Young women take their industrials for one term of the first year in sewing, and for the winter and spring terms of the second year in the Carpenter, Cabinet-making, or

MANHATTAN ADVERTISEMENTS.

R. ALLINGHAM, dealer in Fresh and Salt Meats. Special attention to student trade. Goods delivered free.

W. P. HOLMAN,—Drugs and Toilet articles, Fancy Groceries, W. Fruits, Confectionery, Nuts, Cigars and Tobacco.

F. FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

HENRY HARRINGTON,—Livery and Feed Stable. The best teams in the city. Special care given to stabling and feeding horses for the public.

SWINGLE & VARNEY—Book Store. Full line of School and College text-books, school supplies, etc. Call and see us. You will always have a welcome. 320 Poyntz Avenue.

BATH ROOMS.—At Manhattan Shaving Parlor, South Second Street. Hot and cold baths always ready. Everything first-class. Special care taken with ladies' and children's hair cutting. Razors bought and sold. Give me a call. PETE HOSTRUP, Proprietor.

ELSIE H. SMITH, Boots and Shoes, 320 Poyntz Avenue, first door west of Stingley & Huntress. A full line of Rubber foot wear of the best quality at the lowest prices. Mens' all Solid Leather Dress Shoes, \$1.05. Ladies' Fine Dongola Button Shoes, \$2.00. Reliable goods at low prices.

MANHATTAN BANK.—E. B. Purcell, banker. J. W. Webb, Cashier. A general banking business transacted. Bills of Exchange issued on all principal cities and towns of Europe. All bills have personal, faithful, and prompt attention of our attorneys. Proceeds remitted promptly, at current rates of exchange, without any charge of commission.

E. B. PURCELL, Corner of Poyntz Avenue and Second Street, has the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered in all parts of the city and at the College, free of charge.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds. Watches, Clocks, a magnificent line of Jewelry of the best makes. A big variety of Notions that students need. Musical Instruments, Strings, Sheet Music, Instruction Books. Our collection of Spectacles in gold, silver, and steel cannot be beat. Don't forget our ten-cent bargain counter. Everything at lowest living prices.—"75".

THE INDUSTRIALIST.

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GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

THE HACKBERRY.

BY PROF. W. A. KELLERMAN.

THERE was given, a month ago, (by C. S. S.) in *Garden and Forest*, an account of the Nettle Tree, or Hackberry, which, while it related mostly to its distribution and botanical characters, included the statement, also, that it is both a very useful and ornamental tree. As to the latter point, these words were used: "The habit is good, and often exceedingly graceful; the foliage has a bright cheerful green color, and the leaves remain fresh and green on the branches long after those of nearly all other native trees have fallen. They drop finally without any marked change of color. This tree grows very rapidly; it is free from serious attacks of insects, and it is admirably suited to plant as a street or road-side tree."

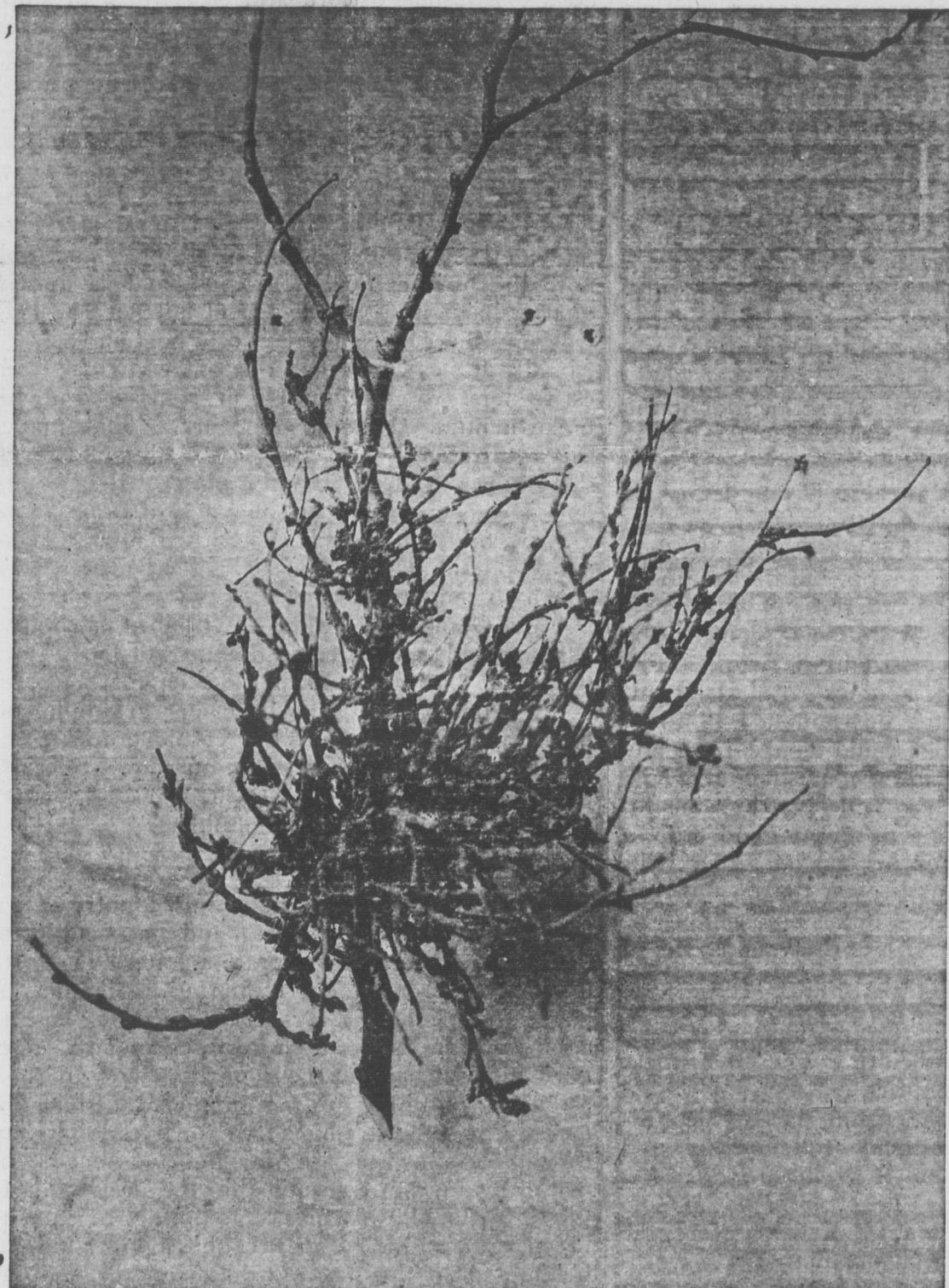
We do not think Prof. Sargent has in the least exaggerated the ornamental value of the Hackberry. Indeed, in this state, which includes a large portion of the "Great American Desert," it has a greater relative value than in timbered regions, where so

show the usual appearance. This was published in the First Annual Report of the Experiment Station (1888), where also will be found a full account of the insect—a species of *Phytoptus*—and its invariably accompanying fungus, *Sphaerotheca phytoptophila*, Kell. & Sw. The insect is a gall-mite, and the fungus is a species of powdery mildew. The cause of the abnormal growth or knots, we think, should be attributed to the influence of both the insect and the fungus. The disease occurs in the eastern part of the State (and reported also in Iowa), and extends westward about as far as forest trees extend in our State. No remedy has been experimentally determined upon, except cutting off and burning the infected parts, though possibly careful spraying with some insecticide might be successful.

EDUCATION WITHOUT ADAPTATION.

WHY is it that we do not exhibit as much sense in educating our children as we do in training our animals? asks the *Western Plowman*.

A farmer has a colt and a boy. He studies that colt carefully. He notes the points in its physical construction, his disposition, and temperament, and he can readily tell whether it is best to train him for a trotter or a plow horse. He would be soundly laughed at if he should send a heavy-built, stolid, muscular, slow-going animal to a jockey to be trained for the race course, and his judgment would be as mercilessly scored if he should take a high-spirited, graceful young colt, with all the points of a trotter in his make-up, and decide to make a draft horse of him. But that same man will give his son an education with no consideration of his mental adaptation to the course of study he is pursuing. He only knows that custom has prescribed certain things to be



many ornamental trees grow in perfection. Here even an inferior tree has considerable value if it will withstand the hot winds, the drouth, and other phases of our variable climate. The Hackberry does not suffer from these causes, and, besides, it is planted extensively as an ornamental tree in cities and about country homes. Unfortunately, however, we can scarcely say that it is free from serious attacks by insects. The Hackberry Knot interferes sadly in some cases with its ornamental value. The trees in the forest do not seem to be so abundantly attacked, but the isolated ones are, perhaps, in the majority of cases, disfigured by few or numerous knots, and sometimes the tree is rendered very unsightly and finally killed by the insect and fungus which causes the knot. A figure from a photograph is here given of a knot that will

learned, which is called getting an education, and if he goes through this course of training he has got his education, and his duty as a parent is discharged. The result is that boys are educated away from the work of life they are adapted to, instead of being well prepared for what their natural qualifications fit them to do well. This is why the boy who would have made a successful machinist goes through life as a poor preacher, or a third-rate lawyer, and a discontented blacksmith hammers his life and energy out of the forge, with talents and inclinations which would have made him a successful physician. A human life may be made a success by a good education, and it can just as surely be made a failure by a system of false training. Indiscriminate education without considering adaptation is a grave defect in our ed-

ucational system. It involves not only a waste of time and money, but a most fearful waste of human energy by misdirected application. If there is any one course of training that is adapted to all, whatever pursuit in life they may follow it is the education afforded by a reliable business college. Every person is compelled to have business dealings with his fellow men, and a thorough preparation for the business affairs of life cannot well involve an unwise expenditure of time, money, or effort.

WHY BOYS LEAVE THE FARM.

We hear much as to why so many farmer boys crowd into the cities. One reason, usually given, is because of the drudgery of farm life; another is that there is too much work and not enough recreation; still another is that the parents do not give their boys a share in the crop; yet another, that the "old man" is stingy, and will not give his boys enough spending money, etc., etc. As to the first, we say, that there is no business so free from drudgery as that of farming. There is no occupation where a man can so really be a man, and a free man, as that of farming. True, he must work hard sometimes, but at other times he can take it easy; and while his work demands his care daily, yet he is not so closely confined as those in other occupations. The merchant, the clerk, the book-keeper, or the telegraph operator, neither has as much time he can call his own, often sees his family but once or twice a day, and that often only before daylight or after nightfall.

Not so with the farmer boy; while he has plenty of work, there are few days that he cannot have a little time to himself, and always spend his evenings at home. As to the charge that the father does not take the boy as a partner, how many merchants admit their sons as partners, or give them a share of the profits before reaching their majority?

As to the charge of the old man's stinginess in not giving the boy enough spending money, there is nothing in it. Farm boys should be taught the value of money, and how to save it. Too many of our farmer boys learn to spend money before they learn to earn it. But there is another cause which takes more boys away from the farm than all those named above. It is not because the boy does not get a share of the crop, but because he is not taught the why and wherefore of what he is called to do. The parent does not consult the boys and get them interested in the work. The boy is made to do work he does not understand. Let the father consult the boy and take him into his confidence, get his ideas, and then correct any errors he may discover, and explain to him why a thing is done, and the boy will soon become interested, and be as anxious to raise a good crop, a fine colt, or a nice calf or pig as the father will. Throw as much responsibility on the boy as you can; let him feel that he is held responsible, and he will soon take as much interest in the affairs of the farm as his father does.

But, again, in order to properly educate the boy, he must have good reading matter; less of politics and more of agriculture and live-stock. We would not ignore politics entirely, but would have less of partisan politics and more of the business part of it; more political economy and civil government and less abuse of those who differ with him in his views. Teach him that people may differ, and yet be honest. Let, therefore, the political papers taken be clean and free from word-slanging. In order to arrive at correct conclusions, one should read all sides of these questions, and then the reading should be supplemented by a free discussion of the questions or matter. Under no circumstances should the free discussion be omitted; the boy should be taught to give a reason for the opinion he holds; but above all he should be taught to study his own business, if he is to make a successful farmer. He should read the best agricultural and live-stock books and papers extant.

If the father will take pains to discuss any new idea or new theories advanced, and instruct the boy to think for himself, let the first question be: Is the idea a practical one? What is there in it for me? Is there anything to be gained by adopting these new ideas or new methods? If so, what? This will bring the young man to thinking and acting for himself, and will fortify him against taking things for granted, without inquiring into the real merits of the case. Thus the boy will soon become interested in the farm, farming, and stock-raising, and will see much more beauty and less

drudgery than in any other occupation. He will see that he is the most independent man on earth, and instead of wanting to leave the farm, will see that it is in good shape, and that only good stock is bred.—*Jacob Funck, in Prairie Farmer.*

FORTUNATE FARMERS.

We hear a great deal about farmers in Kansas who are poor and in distress, but particulars of farming which is successful in spite of the low prices, or rather because of the vast crops, are not so much exploited. To the farmers who own or can buy cattle and hogs, the present price of corn is not a matter of great discouragement. On the contrary, they make corn which cost them 14 cents a bushel to raise or buy, pay them 35 or 40 cents a bushel in a few months—a profitable business. A correspondent, doubtless a farmer, signing himself "C," writes as follows to the Wichita *Eagle*:

"I have today compiled the statements of a number of the leading farmers of Sedgwick County and adjoining counties.

"Leroy Fosdick, of Sunny Dale, Sedgwick County, came here nineteen years ago. His capital was \$6.25. He has accumulated \$30,000 worth of property, clear of incumbrance, by farming alone, having never engaged in anything else. He says he has never sold corn for less than 40 cents per bushel, and often as high as \$1.25 per bushel. He has just marketed sixty head of hogs, 8 months old, averaging 267 pounds. He fed these hogs 567 bushels of corn and \$33 worth of slop. Five hundred and sixty-seven bushels of corn to sixty-three hogs makes nine bushels to the hog; 267 pounds of pork at \$3.65 (present prices) makes \$9.24 to the hog. Deducting 50 cents to the hog for slop, leaves him \$1.02 per bushel for corn. He raised 100 acres of corn this year, averaging sixty bushels to the acre. He says the farmer who sells his corn in its natural state reminds him of the man who raised a steer and took it to the butcher, had it dressed, and brought a quarter back, and then owed the butcher \$2. He was only short three-quarters of a beef and \$2.

"Mr. James Campbell, one of Sedgwick's oldest feeders, says ten bushels of Kansas corn will make a hundred pounds of pork. That makes corn worth about 39 cents per bushel. Of course, the grain is in the thrift and rapid growth of young hogs in this climate. Mr. Gaynes, of Pratt County, says fourteen bushels of corn will always make a 300-pound hog in Kansas. That makes corn worth 70 cents per bushel.

"Mr. Gamble, of Grant Township, this county, has just sold eighty-five head of hogs to Jacob Dold that made him 57 cents per bushel for his corn. As well try to get results by trying to administer medicine by telephone as to get the proper price that belongs to corn other than on foot. Successful farmers sell their corn to the packing houses; poor farmers, to the grain gamblers."

WORSE THAN THE LOTTERY.

The "truly good" people of this country have a holy horror of lottery schemes, and the recent introduction of a bill to incorporate a lottery in North Dakota has brought out numerous expressions of indignation. The *Live-Stock Indicator* has no apology to make for any lottery scheme, but does not believe that all of them put together are half as bad as gambling in grain or stocks. In the lotteries, a person pays his dollar, or five dollars, or forty dollars, as the case may be, and that is the end of his investment until after the drawing. In the "respectable" species of gambling, he puts up his margin, and if the market goes against him he is tempted to "put up a few dollars more," hoping to win, until he has planked down his last dollar, and still the market won't go to suit him.

Worse than all the lotteries; worse than "ta-ro," "keno," and other species of pure and unadulterated gambling, are the "bucket-shops" which are permitted to exist because based upon the speculative trading on boards of trade. And how many farmers were bled last year by buying grain on the strength of Prof. Blake's "guess"—looked upon as a prophecy—that values of the cereals would surely advance? In demanding legislation, farmers could do themselves and the country no better service than securing the overthrow of this "respectable" species of gambling.—*Kansas City Live-Stock Indicator.*

The trustees of the sugar trust are in a peck of trouble. They are harassed by suits to enjoin, they are quarreling among themselves, and now the broker who did the work of formation sues for \$500,000 commissions. Truly these are troublous times for trusts.—*St. Louis Grocer.*

KANSAS THRIFT.

Judge Blain shipped nearly 100 bushels of tame grass seed, of his own raising, to Topeka last week. The Judge reports that at the price received it paid better than raising corn.—*Manhattan Mercury.*

Kansas breweries have been converted into tanneries and feed mills, and this week eight lager-beer cars were switched into our side track to be filled by the Alliance with corn and oats.—*Jewell Republican.*

The Great Bend mills are greatly pleased at the receipt of a letter from Belgium stating that their flour is the best that comes from America. It will now be in order for other Kansas mills to put in documentary evidence.

All the flour mills in the city are running day and night at present. The Central Mills report that they are behind fifty-seven cars on their orders, and it is said that each of the others are in the same fix.—*Atchison Champion.*

William Way, a farmer of this County, states that the butter he has made from the milk of four cows has brought more clear cash with less work than the raising of 700 bushels of corn at the present rates.—*Chetopa Advance.*

A farmer who would not sell his hogs at \$3.10, butchered them, and reports having received more money for the lard than he would have got for the hogs at the price given above. Is there a lesson in this for our farmers?—*Marysville Democrat.*

The Arkansas City Roller Mill has been awarded the contract to furnish flour to the different Indian tribes of the Territory. The contract calls for four hundred and forty thousand pounds, for which \$880,000 will be paid.—*Wellington Monitor.*

The Junction City *Union* says that a farmer in Geary County has found a four-foot vein of iron ore on his farm. He made the discovery several years ago, but kept it secret until he received his patent for the land. Specimens have been sent to Pueblo and elsewhere to be tested.

We are informed that the Anthony Salt Company gives employment to fifty men. The *Globe* no doubt employs a proportionate number. These are the kind of institutions that built up towns and sustain population, and we are right glad to note that both plants are prospering.—*Anthony Republican.*

Attorney Kent has received notice that a colony of farmers from McLean County, Ill., are making preparations to take up their residence in Reno County. The colony is composed of a large number of wealthy and influential farmers who have become dissatisfied with the slow, foggy ways of that State, and have decided to locate in a country where push and energy form the main characteristics.—*Hutchinson News.*

Kansas broom corn was one of the paying crops last year, a manufacturer informing us last week that it is now worth \$160 per ton. We believe it would pay the Southern Kansas farmers to investigate the merits of this crop, and probably to plant a large acreage. It is certain that we grow too much Indian corn, and that in years of plenty the market is so depressed that it does not pay. Broom corn has been grown in this country, and of splendid quality, but it requires expert handling to get top prices.—*Fort Scott News.*

SAVE THE TIMBER.

We are glad to see that the American Forestry Association is making a vigorous effort for the preservation of the forests on our Western public lands, and is urging Congress to pass a bill withdrawing these public lands from sale for the present. Millions of dollars' worth of timber have been stolen both, for home and export trade, and radical measures are required in order to secure these forests from destruction by fire and the ax within a comparatively short period. Nor is it simply the loss of the timber that is to be considered. All interior regions without forests are visited by long droughts and destructive storms; for forests have an intimate relation to the rain-fall and water supply. It has long been felt by those who have most knowledge of the subject that vigorous measures ought to be taken by Congress to stop the annual waste of something like ten millions of dollars now going on in the forests of the public domain.—*The Congregationalist.*

CALENDAR.

1889-90.

Fall Term—September 12th to December 20th.
 Winter Term—January 7th to March 28th.
 Spring Term—March 31st to June 11th.
 June 11th, Commencement.

1890-91.

Fall Term—September 11th to December 19th.

TO SCHOOL OFFICERS.

The College Loan Commissioner has funds to invest in school district bonds *at par*. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioners and the State Agricultural College. Address Jno. E. Hessian, Loan Commissioner, Manhattan, Kan.

LOCAL MATTERS.

Secy. Graham lectured last evening before the Wabaunsee Schools.

The cold weather this week caused some discomfort in the classrooms.

Bad weather interfered seriously with Farmers' Institutes at Russell and Hays City last week.

Scarlet fever in a mild form has made its appearance at the College. There is as yet but a single case.

Many students attended the piano recital by Prof. Kohler, at the Congregational Church, Thursday evening.

Four hundred and thirty-seven names appear upon the chapel roll this term, a larger number than ever before.

The past few days of severe cold weather have emptied the coal cellars faster than at any previous time this winter.

A crocus stuck its head above ground on Monday, near Horticultural Hall, and nodded its bright head saucily until the cold wave "froze it in its tracks."

Assistant Breese's recent article in the INDUSTRIALIST, "The Rainfall for Thirty Years," is reproduced in the last quarterly report of the State Board of Agriculture.

The Farm Department is feeding sorghum to three three-year-old steers, with a view to obtaining the feeding value of the same. The experiment will be continued three months.

Mrs. Winchip's father is still very low, requiring her constant attention. Her classes have been well cared for by Miss Abbie Marlatt, '88, who has been assisting in the sewing rooms since the beginning of the year.

A large specimen of tuckahoe was sent to the Botanical Department this week by Dr. W. S. Newlen of Oswego, Kansas. It is oval in shape, eight inches long and five and one half inches in its shortest diameter. Very few found are larger than this.

Mr. Postlewaite, of Jewell County, and Rev. E. S. Riley, of North Topeka, were visiting Monday morning in company of Mr. Geo. F. Thompson. Rev. Mr. Riley has been "called" by the Baptist Church of Manhattan, but it is not yet known whether he will accept the pastorate.

The caving in of the furnace this morning (Saturday) leaves Mechanics' Hall without heat or power; and while a favored compositor luxuriates in the greenhouse, whither he has carried a case of type, the remainder of the force scatters to the proverbial "four winds." The INDUSTRIALIST is delayed by the accident.

The farmers about Topeka held a pleasant institute on Tuesday and Wednesday, at Lincoln Post Hall, though the severe cold prevented a full attendance. Pres. Fairchild addressed the meeting on Wednesday morning upon "The Relation of the Agricultural College and Experiment Station to Rural Education," a topic selected by the Committee of Arrangements.

Prof. Popenoe returned yesterday from Austin, Texas, where he attended the annual meeting of the American Horticultural Society. Following the session was an excursion to all the principal places of interest in the State, including a day's sail on Aransas Bay, of which the Professor brought home a souvenir in the way of a peeled nose. June weather prevailed during the stay of the horticulturists.

Regent Hessian has been busy this week closing up business affairs with his long-time partner, Hon. Geo. S. Green, whose appointment as Supreme Court Commissioner compels a dissolution of the partnership in law-practice so long maintained. All will miss the familiar firm name, while they rejoice that so good a man as Mr.

Green is called to the bench, and have confidence that Mr. Hessian is fully able to hold the practice alone.

The following bound volumes have been added to the Library during the past two weeks: Official Records War of the Rebellion, Volume 27, Part 2; Same, Volume 27, Part 3; Report of the Commissioner of Navigation, 1889; Report of the Comptroller of the Currency, 1889; American Journal of Science and Arts, Second Series, Volumes 1 to 50; Same, Third Series, Volumes 1 to 26; Transactions of Kansas Academy of Science, Volume 11; Qualitative Chemical Analysis, from the author, Prof. R. C. Kedzie, Lansing, Michigan; Story of the Bacteria, by J. M. Prudden; Cryptogamic Botany, by Bennett and Murray; Book of Instruction in Metal Engraving, by G. H. Strong. The whole number of bound volumes now in the Library is 9,495.

The public hour of Friday afternoon was occupied by the Second Division of the Fourth-year Class in original productions. Several of the speakers are evidently in favor of reform in many of the conditions of society, as may be judged by the topics discussed. All were highly appreciated by the audience. We quote the subjects, with the names of the speakers: "Seizing Opportunities," C. W. Earle; "The Progress of Invention and Civilization," S. C. Harner; "The Abuse of the Veto Power," J. W. Ijams; "The Story of the Pharaohs as Told by Modern Research," Nellie Little; "The Evolution of the Modern Republic," E. T. Martin; "Wise and Unwise Reform," W. L. Morse; "The Social System of Edward Bellamy," Julia Pearce; "The Struggle between France and Germany," E. C. Pfuetze.

GRADUATES AND FORMER STUDENTS.

H. L. Tripp, student in 1887-8, hopes to resume his studies in College next term.

W. R. Spilman, Second-year in 1887-8, hopes to continue his course in the near future. He was a caller at the College yesterday.

E. H. Snyder, '88, and Dora VanZile Snyder, Third-year in 1887-8, rejoice in the birth of a son on February 23rd, at their home in Denver.

Anna Fairchild has so far recovered health and strength as to be allowed to return home after nearly two months' stay in Topeka, but she will not re-enter College this year.

A. M. Green, '84, writes that his section of California is experiencing the heaviest snowfall and the hardest winter in its history. When good weather is in question, the Central State of the Union is the place to find it.

EXPENSES.

Tuition is free, and no general fee for incidental or contingent expenses is charged. In a few special departments of instruction, the following payments are made in advance to the Secretary:

In the term of Analytical Chemistry, students pay \$3 for the chemicals and apparatus used in their laboratory practice and analysis.

In the Printing Office, young men, in their first year, pay \$3 a term for office expenses. Advanced students have the use of the office for the work performed during the industrial hours.

In Telegraphy, young men pay \$3 a term for office expenses.

Young women are furnished both Printing and Telegraphy free of expense, these two offices, with the Sewing and Cooking Departments, being provided especially for their industrial training.

Lessons in instrumental music—two a week—are from \$10 to \$15 a term, according to its length; one a week, \$6 to \$8.40. One-half is to be paid to the instructor in charge with the first lesson, the other half at the middle of the term.

The cost of text-books at the book stores is, for the first year, about \$4 a term; for the second year, \$2.75 a term; for the third year, \$7 a term; and for the fourth year, \$5.50 a term.

The expenses for apparatus and tools to each student during the course are as follows: Drawing, \$3.50; microscope for Botany and Entomology, \$1.50; case, pins, etc., for Entomology, \$2.25; rules, in carpentry 25 cents, printing 25 cents. The total expense for these articles during the four years is less than ten dollars.

Board and washing are not furnished by the College. Board, with furnished rooms, can be procured in private families at from \$2.75 to \$4 per week. Some students board themselves at even less cost; and rooms for the purpose can be obtained at a rent of from \$1 to \$3.50 a month. Washing costs from 50c. to \$1 a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$120 to \$200 a year.

INDUSTRIAL TRAINING.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have Farming, Gardening and Fruit-growing, Carpentry, Cabinet-making, Iron-work, Printing, or Telegraphy. Young women may take Sewing, Printing, Telegraphy, Floriculture, or Music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second year and the fall term of the third year, upon the farm, gardens, and orchards. Young women take their industrials for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen, laboratory and dairy.

COLLEGE SOCIETIES.

Scientific Club.—President, O. P. Hood; Vice-President, J. T. Willard; Secretary, A. A. Mills; Treasurer, Abbie Marlatt; Board of Directors—J. D. Walters, J. F. Morrison, and O. E. Olin. Meets in Chemical Laboratory on the fourth Friday evening of each month.

Webster Society.—President, G. E. Stoker; Vice-President, S. C. Harner; Recording Secretary, H. W. Avery; Corresponding Secretary, C. A. Campbell; Treasurer, J. W. Ijams; Critic, W. T. Swingle; Marshal, B. H. Pugh. Board of Directors—G. E. Stoker, J. A. Davis, C. A. Campbell, W. S. Arbuthnot, E. R. Curtis. Meets Saturday evening at half-past seven o'clock.

Alpha Beta Society.—President, Marie B. Senn; Vice-President, W. W. Hutto; Recording Secretary, Delpha Hoop; Corresponding Secretary, Sadie Moore; Treasurer, J. N. Harner; Marshal, P. E. Westgate; Director, V. O. Armour; Critic, May Harman. Meets Friday afternoon at three o'clock.

Hamilton Society.—President, S. VanBlarcom; Vice-President, A. K. Midgley; Recording Secretary, A. E. Martin; Corresponding Secretary, F. A. Waugh; Treasurer, G. W. Wildin; Critic, F. A. Campbell; Marshal, R. W. Newman. Board of Directors—A. F. Cranston, F. A. Waugh, F. A. Campbell, U. G. Balderston, C. P. Hartley. Meets Saturday evening at half-past seven o'clock.

Ionian Society.—President, Julia Pearce; Vice-President, Doris Kinney; Recording Secretary, Lottie Short; Corresponding Secretary, Maude Whitney; Treasurer, Myrtle Harrington; Marshal, Kate Pierce; Critic, Fanny Waugh. Board of Directors—Effie Gilstrap, Phoebe Turner, and Alice Vail. Meets Friday afternoon at 3 o'clock.

Young Men's Christian Association.—President, W. H. Sanders; Vice-President, V. O. Armour; Recording Secretary, H. B. Gilstrap; Corresponding Secretary, R. W. Newman; Treasurer, H. Darnell. Meets in Horticultural Hall Sunday afternoon at three o'clock.

Young Women's Christian Association.—President, Christine Corlett; Vice-President, Ora R. Wells; Recording Secretary, Callie Conwell; Corresponding Secretary, Ava Hamill; Treasurer, Sarah Cotrell. Meets Tuesday morning at eight o'clock in Society Hall..

SOCIETY HALL, February 22nd.

The Websters were called to order by Pres. Stoker, and the roll-call showed a good attendance. Devotion by J. Frost. Debate, Question, "Resolved, That the Faculty of the College should have no control over the students, outside of the class-rooms," was argued on the affirmative by Mr. Harman. It shows a lack of confidence in the student when such is the case. It is entirely uncalled for, as the students are fully able to take care of themselves. It is a breach upon personal liberty. If the Faculty has the right to say how a student shall spend his evenings, it has a right to dictate what he shall eat and what he shall drink and wear. Mr. Tucker presented the negative. Some colleges are too severe in their control of students, but this does not prove that there should be no control. If restricting their liberties improves their morals, it is perfectly right and just that they should be controlled. Book knowledge is not the only aim of an institution of learning. Mr. Kistler then presented the affirmative, and Mr. Kirby the negative, after which Mr. Harman closed the argument on the affirmative. The Faculty is not responsible for the conduct of a student outside of school hours. An offense by a student is a breach of civil law as much as an offense committed by any man. Mr. Tucker closed the negative. Fairchild's moral philosophy says: "The less the children of a family or the pupils of a school desire to be governed the more they need it." A writer in the *North American Review* says: "It is of moment that the instructor in a college be made to realize what some very able teachers averse to the personal exercise of discipline are not willing to do, that they have a responsibility in regard to the conduct of the young men under them as well as in regard to their scholarship." The Society decided by vote in favor of the negative. Declamations, J. B. Paddock, "Uses of Cottonseed;" and W. W. Robison, "Choosing a Trade." Essay, "Southern Prisons," C. O. Whitford. The *Reporter* was edited and read by J. O. Morse. The principal articles were as follows: "Two Impending Evils," "Ought not the K. S. A. C. to be represented in the Oratorical Contest?" "Uses of Electricity," "Washington's Birthday," Recession Music, B. H. Pugh, a violin solo. Discussions, A. E. Campbell, "Organizations among Farmers," F. S. Little, "Small or Large Farms?" Ed. Webster, "Mines and Miners of Osage City." Messrs. R. U. Waldraven, A. B. Kimball, and A. A. Mills, being requested to address the Society, responded briefly. Unfinished business. New business. Adjourned 10:30 p.m. C. A. C.

HAMILTON HALL, February 22nd.

Pres. VanBlarcom takes the chair and the audience comes to order. Most of the seats are full, and the room is rapidly filling. Secy. Martin calls the roll. S. I. Wilkin leads the Society in prayer. We pass to the programme of the evening. T. D. Hogbin's declamation is entitled "Knowledge," J. W. Mills comes on with his essay on "Different Views of City Life," in which he tells what country people usually think of it, how city people themselves regard it. He seems to think that it doesn't suit him. Now comes the debate. F. A. Waugh takes the stand and opens the question, "Are Early Marriages Advisable?" He cites statistics showing that married men live nearly twenty years longer than bachelors, and argues that marriage is a life preserver and should not be delayed. He says that married men, surrounded by good home influences, are not given to the reckless exposures of themselves that are common among the unmarried. In the early prime of manhood, they cannot afford to be without these influences. The early establishment of homes has a good moral influence on society. All considerations for late marriage ignore any sentiment in the matter. No one would delay a marriage that the parties might care the more for each other, but that a choice might be made which would be better from the standpoint of wealth, position, etc. Again, for the women, early marriage is nearly always advisable. The only perfect life for any woman is to be sought in marriage, and after a reasonable age she has no consideration for its postponement. F. A. Campbell comes from the back seat to the front and begins, "I appear in behalf of a cause which for thousands of years the whole world has honored. Long ago God placed man and woman upon this beautiful earth that he might be his comforter—that, united by the mighty ties of love, they might enjoy together the blessings of this life. The grandest mission of humanity is to be sought only through the relation of man to woman. Through their obligations to each other we have the sacred institution of marriage; and inevitably from this the home, man's only reality of an earthly heaven. But from this institution of marriage comes not happiness alone. It has brought to man his deepest misery, his sense of despair—the bitterest hours of his life. How are we to rid marriage of all the evil that accompanies it? My opponent suggests early marriage. Most of our great men were married late. Had they married early, subsequent fame which they achieved would have been impossible." He closes by ridiculing the idea that early marriage is a life-preserver. R. W. Newman continues the argument for the affirmative. George Eliot says that if your dinner is ready at the appointed hour the meat tastes good and the vegetables are appetizing; but if dinner be delayed, the meat, though never so good, is distasteful, and the whole enjoyment is gone. So, she says, marriage is. If made at a proper age, it is always a joy; if unduly delayed, it is never satisfying. Mr. Newman gave instances of his own observation where early marriages were advisable, or would have been better than the delays which took their place. G. L. Melton says, in support of the negative, that youth is a time in which man is not so capable of judging of his own and others' natures as he will be when he is older. It is not advisable for him to make selections which influence his own life. F. A. Waugh closes the affirmative. He says that his opponent spent the week in looking over the library to find the names of a half dozen great men who were not married early, and then found that James G. Blaine was married at 21 and Grover Cleveland at 50 or thereabouts. The inference for the affirmative may be easily seen by Republicans. Early marriage has paid those who have tried it. Those of the audience whose fathers and mothers were married young will not say they have been sorry for it. Those whose parents were not married early will not maintain that the results would have been bad had they married sooner. F. A. Campbell ends the debate. Early marriage prevents further education, puts an end to many aspirations. He closes by giving the experience of a brother, in support of his side. Two of the Judges, H. N. Whitford, C. J. Dobbs, and Prof. Hood, think that the affirmative has won. G. J. VanZile presents the *Recorder*, containing "A Deep Sea Romance," "Church Social," "A New System of Binomial Nomenclature," "Dreary Hours," "Cupid's Experience at the Social," etc. F. R. Smith and F. A. Campbell now sing a duet to a banjo accompaniment by another Smith. A. F. Cranston reads a chapter from Knickerbocker's History of New York, detailing some of the arguments of the Christian Fathers in justification of their appropriation of American soil. Mr. Criner, in his discussion, gives directions for rail splitting. A. D. Rice discusses the struggle between the farmers and capital. He gives a short history of the struggle, and speaks of the organization of Farmers' Alliances. A declamation on "The Empire of Public Opinion" is delivered and the Society plunges into the whirlpool of general business, to adjourn much later in the evening.

WAUGH.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

The new catalogue of the State University contains three fine photographs of the main buildings.

The Universities of Emporia, Ottawa, and Salina have recently organized local Athletic Associations.—*University Kansan*.

Campbell University at Holton claims to have a larger number of students in the musical department than any other institution in the State.

The Chase County Teachers' Association met at the High School building at Cottonwood Falls, February 22nd. The papers report a profitable time.

The Reno County teachers report a good meeting at Hutchinson, February 22nd. The evening address was delivered by State Superintendent G. W. Winans.

For reasons unknown to outsiders, the State Oratorical Association has refused to grant the application for admission of Winfield College and Highland University.

There will be a convention of the School Principals of the State at Lawrence, March 8th. A good programme has been provided for the session, and it is expected that the attendance will be large.

Prof. Dyche of the State University says that at present the Kansas University's collection of North American animals is excelled only by the collection in the National Museum at Washington.

The State Superintendent has apportioned the semi-annual dividend of the permanent school fund among the counties of the State. The amount apportioned is \$27,345.06, being 51 cents per capita for the school population of the State, 524,266.

Prof. J. H. Canfield, President of the National Educational Association, has, upon consultation with the members of the Executive Board, decided not to change the date of the meeting to be held at Minneapolis. The date remains as before, July 4th to 11th.

The Board of Education of Manhattan have bought a large flag, and have erected a flag-staff on the tower of the High School building. The flag was hoisted on Washington's Birthday for the first time, and was greeted by the rousing cheers of eight hundred pupils and over a dozen teachers. Long may it wave!

The Kansas Institution for the Deaf and Dumb at Olathe was robbed of its fine team about two weeks ago, and all endeavors to get a clue of the bold thieves have so far proved fruitless. The Star says: "They could not have been taken at a more needy time; for the plowing season approaches, and here we are without a team."

A collegiate course is a transforming agency. No one completes it without a radical change somewhere in his manner of living and thinking. One student arises from the dead ashes of his old self a new creature, cultured and refined. Another comes forth a fashionable nothingness, a close approximation to a perfect vacuum, which nature and all intelligent animation abhors.—*University Review*.

When we first heard that the Faculty of Washburn College had forbidden the junior girls from going to the State Oratorical Contest, we considered it rather tyrannical; but now that the boys of that College have turned out with tin horns, bull fiddles, and blackened faces, and given the Professors a disgraceful charivari, we begin to think the Professors were right in refusing to trust the young girls with such hoodlum escorts.—*Howard Courant*.

Delegates from Washburn College, State Normal, Emporia College, Agricultural College, Ottawa College, and the Wesleyan, and State Universities met last Saturday at the State University, and temporarily organized a State Athletic Association. The election resulted as follows: President, H. F. Kellogg, of K. S. U.; Secretary, Tucker, Washburn, and Treasurer, W. W. Hutto, Agricultural College. Plans were proposed and discussed and committees appointed.—*University Courier*.

We are in receipt of No. 1, Vol. 1, of the *Dial*, the student's organ of St. Marys College, St. Marys, Pottawatomie County. The paper, or rather magazine, is well filled with reading of an elevated literary character, and carefully prepared news con-

cerning the institution, while in point of make-up it is simply a gem. We hope the young editor will be able to maintain the high degree of excellence in the succeeding numbers, and make it a shining example for the two dozen College papers of the State, a majority of which are little less than a disgrace to their editors. The price is 50 cents for the remaining months of the scholastic year.

The catalogue of the State University for the year 1880-90, just published, enumerates 508 students, 470 of whom are from Kansas, 11 from Missouri, 5 from Colorado, 4 from Iowa, 3 from Nebraska, 3 from New Mexico, 4 from Ohio, 2 from Indiana, and the rest from six other States. Of the Kansas counties, Douglas leads with 194, and is followed by Shawnee, with 15; Johnson, with 12; Leavenworth and Marion, with 11 each; and Dickinson and Franklin with 10 each. Sixty-eight counties are represented. By departments, the attendance is: Collegiate, 354; law, 57; music, 59; art, 40; pharmacy, 31. The catalogue gives the names of 11 candidates for the second degree, 29 for the first degree in the collegiate course, 29 in the law course, and 12 in the pharmacy course. The Faculty consists of 18 professors, 1 assistant professor, 11 assistants, and 2 instructors. The list of preparatory high schools in the State contains the names of 37 cities and principals. Besides the usual matter in regard to courses of study, privileges, etc., the catalogue also contains a short historic sketch of the institution, and a list of all of its officers since the organization in 1864. In 24 years, the University has graduated 531 students.

THE MONEY OF THE WORLD.

Herr Ottomar Haupt, one of the ablest foreign statisticians, makes the following estimate of the amount of gold and silver now held by the leading banks and treasuries of the world:—

	Silver in millions of francs.	Gold in millions of francs.
Associated Banks of New York.....	391	391
Other American banks.....	55	49
American (United States) Treasury.....	1,550	1,628
Bank of England.....	445	445
Scottish banks of issue.....	125	125
Irish banks of issue.....	83	83
Other banks in Great Britain.....	200	200
Banks of France.....	1,547	1,273
Italian note banks.....	33	168
Italian National Bank.....	31	178
Italian Government Treasure.....	12	103
Belgian National Bank.....	35	65
Swiss banks of Issue.....	24	59
Grecian National Bank.....	3	3
Bank of Spain.....	118	102
Bank of Algiers.....	16	17
Bank of Holland.....	152	128
Bank of Roumania.....	32	28
Bank of Portugal.....	5	24
Bank of Sweden.....	24	59
Swedish national banks.....	5	67
Bank of Norway.....	75	75
Bank of Denmark.....	4	841
Bank of Russia.....	12	103
Russian Government Treasure.....	23	144
Austro-Hungarian Bank.....	340	135
German Imperial Bank.....	5	95
German note Banks.....	150	150
Total.....	3,956	7,342

The corresponding totals one year previously were 3,750 millions of francs silver, and 7,190 millions of francs gold, showing an increase of about 200 millions of silver and about 180 millions of gold for last year.—*The Independent*.

THE UNCUT LEAF.

One of the fossilized absurdities and inconveniences of our time is the uncut leaf of the book or magazine. It amounts simply to an unfinished book or magazine. The trimming of each book can be done by a machine in the fractional part of a minute. The reader is now required to do this part of the publisher's unfinished work. The custom is almost "early English" in its origin, and dates as far back as the time when the Englishman hadn't many printed books, and was so proud and careful of his periodical as to want it sent him with the leaves uncut as a proof that no one had read it before him. Two hundred and odd years ago it was a "big thing" to have any kind of printed matter, and books were then regarded with actual reverence. But the uncut leaf is one of the many barnacles of custom and usage we stagger under and endure, along with the idea, still current with a class, that a woman has no head for business, or that a man can learn no new art, trade, or profession after fifty.—*Chicago Newspaper Union*.

In the distribution of tree seeds by the United States Department of Agriculture, the Chief of Forestry Division issues a carefully prepared circular setting forth certain principles of sprouting and growth, with rules for selection of soil and site, with methods of sowing and cultivation.

PROFIT IN BALING.

A correspondent of *Country Gentleman* says: "Nearly all hay grown in California is baled in the fields—many farmers keeping baling machines of their own—and set up in stacks or piles of bales in the field. Baling hay of any and all kinds is the most economical practice connected with its storage or marketing that I have ever observed. The hay is compressed to a quarter or less of its loose bulk. It requires only one-third as much space to store it when baled. Two tons can be drawn on a common wagon, or wood rack, entirely dispensing with any special hay rack. In convenience for handling and storing a winter's supply, baling hay appears to me, after two years' experience in California, a process so convenient and economical that it seems a matter for surprise that the practice has not been generally adopted in all the country part of the Rocky Mountains, including Canada and all hay-producing localities in American climates."

COLLEGE BUSINESS.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. Applications for extension of time on land contracts should be sent to the Secretary of the Board of Regents, at Manhattan.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Kellerman, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study or work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

Applications for Farmers' Institutes should be addressed, as early in the season as possible, to the President.

The Experiment Station should be addressed through the Director.

TERMS OF ADMISSION.

Applicants for admission at the beginning of the College year must be at least fourteen years of age, and able to pass a satisfactory examination in reading, spelling, writing, arithmetic, including percent and interest, geography, and elements of English grammar. Those applying later in the year must show sufficient advancement to enter the classes already in progress. Every effort should be made to begin with the first day of a term, in order to advance with classes from the first.

Applicants of mature age who, for lack of advantages, are unable to pass the full examination, may be received on special conditions.

Applicants for advanced standing in the course must pass examination in all the previous studies of the class to be entered; but, if they have pursued such studies in other institutions of similar rank, they may receive credit for their standing in those institutions upon presenting a certificate from the proper officer, showing that their course has been equivalent to that given here.

MANHATTAN ADVERTISEMENTS.

R. ALLINGHAM, dealer in Fresh and Salt Meats. Special attention to student trade. Goods delivered free.

W. P. HOLMAN,—Drugs and Toilet articles, Fancy Groceries, Fruits, Confectionery, Nuts, Cigars and Tobacco.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

HENRY HARRINGTON,—Livery and Feed Stable. The best teams in the city. Special care given to stabling and feeding horses for the public.

SWINGLE & VARNEY—Book Store. Full line of School and College text-books, school supplies, etc. Call and see us. You will always have a welcome. 320 Poyntz Avenue.

BATH ROOMS.—At Manhattan Shaving Parlor, South Second Street. Hot and cold baths always ready. Everything first-class. Special care taken with ladies' and children's hair cutting. Razors bought and sold. Give me a call. PETE HOSTRUP, Proprietor.

ELISIE H. SMITH, Boots and Shoes, 302 Poyntz Avenue, first door west of Stingley & Huntress. A full line of Rubber foot wear of the best quality at the lowest prices. Mens' all Solid Leather Dress Shoes, \$1.05. Ladies' Fine Dongola Button Shoes, \$2.00. Reliable goods at low prices.

MANHATTAN BANK.—E. B. Purcell, banker. J. W. Webb, Cashier. A general banking business transacted. Bills of Exchange issued on all principal cities and towns of Europe. All bills have personal, faithful, and prompt attention of our attorneys. Proceeds remitted promptly, at current rates of exchange, without any charge of commission.

E. B. PURCELL, Corner of Poyntz Avenue and Second Street, has the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered in all parts of the city and at the College, free of charge.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds. Watches, Clocks, a magnificent line of Jewelry of the best makes. A big variety of Notions that students need. Musical Instruments, Strings, Sheet Music, Instruction Books. Our collection of Spectacles in gold, silver, and steel cannot be beat. Don't forget our ten-cent bargain counter. Everything at lowest living prices.—"75".

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GEORGE T. FAIRCHILD, A. M., President,
Professor of Logic and Political Economy.
GEORGE H. FAILYER, M. Sc.,
Professor of Chemistry and Mineralogy.
EDWIN A. POPENOE, A. M.,
Professor of Horticulture and Entomology, Superintendant of Orchards and Gardens.
WILLIAM A. KELLERMAN, Ph. D.,
Professor of Botany.
DAVID E. LANTZ, M. Sc.,
Professor of Mathematics, Librarian.
JOHN D. WALTERS, M. Sc.,
Professor of Industrial Art and Designing.
IRA D. GRAHAM, B. Sc.,
Secretary, Superintendant of Telegraphy, and Instructor in Book-keeping.
OSCAR E. OLIN,
Professor of English Literature.
MRS. NELLIE S. KEDZIE, M. Sc.,
Professor of Household Economy and Hygiene.
MRS. ELIDA E. WINCHIP,
Superintendent of Sewing.
OZNI P. HOOD, B. Sc.,
Professor of Mechanics and Engineering, and Superintendent of Workshops.
ALEXANDER B. BROWN, A. M.,
Professor of Music.
JOHN S. C. THOMPSON,
Superintendent of Printing.
JOHN F. MORRISON, Lieut. 20th U. S. Infantry,
Professor of Military Science and Tactics.
FRANCIS H. WHITE, A. B.,
Professor of History and Constitutional Law.
CHARLES C. GEORGESON, M. Sc.,
Professor of Agriculture and Superintendent of Farm.

ASSISTANTS AND FOREMEN.

J. T. WILLARD, M. Sc., Assistant in Chemistry.
C. M. BRESEE, M. Sc., Assistant in Chemistry.
JENNIE C. TUNNELL, B. Sc., Assistant Librarian.
F. A. MARLATT, B. Sc., Assistant in Entomology.
H. M. COTTRELL, M. Sc., Assistant in Agriculture.
WM. SHELTON, Farm.
S. C. MASON, Gardens.
WM. BAXTER, Greenhouse.
C. A. GUNDAKER, Blacksmith Shop.
W. L. HOUSE, Carpenter Shop.
A. C. MCCREARY, Janitor.
W. T. SWINGLE, Assistant in Botany.

GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week-day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

MUSIC: IS IT SO TAUGHT?

BY PROF. A. B. BROWN.

MUSIC is a science and an art. So also is literature; and the methods of instruction in each should not widely differ. But is music so taught? Does the student of music expect to give two hours to the mastery of each lesson and recite every day for several consecutive years? Are the text-books so constructed as to imply any such a course of study? Is music not deemed, if we judge of it by the place it occupies in the curriculum of many institutions, a recreation or an amusement, only a superficial accomplishment, a detriment to the ambitious student of literature or science or business, which way the honors and the profits lie.

That music has in it the element of intellectual culture not second to literature, and commends itself for this use not less than any of the exact sciences, is not as yet generally conceded, nor will it be till more of the methods of science be found in its text-books, and more of the demands of science are conceded by those who pursue its study.

While it is an amusement, it is more. While it is an accomplishment, it is more; and it becomes more of an amusement and more of an accomplishment as it is more worthily treated as a science and an art. Let the methods of analysis and synthesis be applied to music as to language,—for it is a language. If literature be the language of the intellect, music is the language of the soul; let its simple elements and first principles be clearly seen and stated, symbolized, defined, and classified, so that, as fitting material, they may be used in the construction of art forms, for the expression of thought and feeling, and interest in music will not be found to wane, as the years gather, but to increase as the infirmities of age lead to the introspective rather than the outward means of enjoyment.

We have the authority of Remenyi for saying that "Rhythm, the very soul of expression, has scarcely a place in the text-books, or is but partially taught in the best schools in the world." It is deemed an instinct; and where it is not naturally manifested, it is considered a hopeless and useless task to undertake its culture. We note in some text-books, of latest date and highest authority, as to authorship and publisher, rhythm is unmentioned, its place taken by the term "time," and this only superficially and partially treated.

Pitch in books of equally high authority is exposed to the same criticism. Key and scale, two radically distinct ideas, are used as synonymous terms. Interval is defined as difference of pitch; yet, without explanation, the "prime," or unison—relation without difference—is included under the class of intervals.

We know how easy it is to find fault, and much prefer to commend. The late Dr. Marx, of Berlin, has met in his works all the demands of the most rigid criticism, their profound and terse statement being their only objection to general use as classroom text-books. As books of reference and collateral reading, they cannot be dispensed with.

But the attributes and resources of music which have led to this misconception, misuse, and misplacement, will in due time contribute to her greater exaltation and utility. When it is perceived that the study of musical expression is but the study of the action of the soul; that what is abstract and obscure in psychology, becomes concrete and clear when presented under musical symbolism, and heard by means of musical skill; when its utilities in the direction of soul culture are understood and duly appreciated; when it is perceived that musical rhythm guides the poet in the measure of his lines, and the orator in the construction

of his periods; that the oracles of the Gods, the utterances of the prophets, are all given in measured (musical) phrase and sentence; that, more than rhetoric, it gives elegance and force to diction, and, mingled with voice of speech, gives increased power to eloquence, it will be lifted to its true place in the course of education.

Music's elements, principals, and symbolism, mastered in conjunction with the elements of literature, by rightly adjusted and scientifically prepared text-books, add no burden, but rather lighten the load of the already overburdened juvenile learner; ministering by its varied instruments and ever-increasing works to the social, political, and religious improvement and pleasure of the people; developing more and more, by its songs of patriotism, the love of country; by its songs of love and friendship, the love of home; and by its hymns of praise and devotion, the love of God.

THE INJURY TO GRAPES BY BIRDS.

BY PROF. D. E. LANTZ.

LAST season the statement was frequently made that fully half the crop of certain vineyards in this vicinity was destroyed by birds. From the press of the State I also gathered the information that many other sections had suffered from similar depredations. It may be that some of the statements were exaggerated, but the evidences of serious losses to the growers from the source indicated are conclusive.

Having always been a most ardent advocate of bird protection, I have been especially anxious to discover whether this injury to the grapes can be traced to any particular species of birds, or whether many species puncture them. I have sought this information from many grape-growers, but the testimony received has been of such a contradictory character, mingled with so much of conjecture by the observers, that it has been entirely insufficient to establish the guilt of a single species of birds. When I have asked whether the persons actually saw a bird puncture the grapes, they have usually admitted that the blame was attached to the species because it was seen in the vineyard, but that they themselves did not see the damage inflicted.

Some are positive that the Oriole does the mischief; others think that it is the English Sparrow; and thus through the list of our most common birds; while not a few insist that the injury is due to the stinging of bees and wasps, and not to the birds at all. These last would not be very trustworthy observers to establish the identity of the real marauder.

There can be no possible question but that the injury is done by birds. It may be done by many, a few, or even by a single kind of birds. If but one or two species are responsible for the damage, it would be of advantage to know it; especially if, as some suspect, the English sparrow is the principal thief. There is some color to the claim that this species is mainly responsible for the damage, from the fact that the injury is greatest near our cities and villages.

My own observations seem to show that the injury is mostly done very early in the morning. The birds puncture the grapes to obtain the cool juices lying under the skin, and they are excellent judges of the flavor of the different varieties and of the ripeness of any kind.

It is my purpose, with the co-operation of the State Horticultural Society and the fruit-growers of the State, to gather some data on the subject of the injury to small fruits by birds, and present some results of the inquiries made in a shape which will be of permanent value. I doubt, however, whether such investigations will change my present opinion as to the usefulness of a single species of birds.

THE GOOD GARDENER.

The earliest date at which I ever planted early vegetables in open ground was February 24th, but two years out of three I have planted before March 10th. At this first planting I sow peas, lettuce, beets, spinach, cabbage, radishes, and onions, and not one year in five will any of them be injured.

I have had my garden freeze up solid after planting, mercury going down to within eight degrees of zero, and remaining for ten days or two weeks, and as soon as the ground thaws the vegetables would come up. I think that two years out of three the ground freezes after all these are up, and the peas, lettuce, spinach, and onions are never injured by it, and rarely the beets, cabbage and radishes, but sometimes these will be thinned out by a late freeze.

It is wise to plant all the vegetables that mature early, such as early peas, lettuce, spinach, and radishes, adjoining each other, for they will all be past use in June, and the land can be cleared and a second crop planted. I found, by repeated experiments, that cabbage-seed sown in open ground as early as the land can be worked will make good heads earlier than plants taken from the hot-bed, for the latter must go through a hardening process before they can make a start to grow, while the plants grown where they are to stand start much earlier into vigorous growth.

It is easy to have abundant supply and constant succession of peas for about two months, but to do this there should be not less than four plantings, and from one to two quarts of seed used at each planting, according to the size of the family.

Most farmers will plant a pint of sweet corn at two plantings, and have sweet corn on the table three or four weeks; but by planting one of the small hardy early varieties early in April, and following up with a planting every two weeks until July 4th, I have an unbroken supply for 100 days. I use Stowell's Evergreen for main crop, and find that the fodder pays all the expense of growing; and if more of it is planted than can be used in the family, it is just as valuable to feed to either hogs or cattle as field corn.

The season for tomatoes may be made nearly five months long, if a few plants are started early in March and transplanted two or three times, giving them room to develop, so that they will blossom and set fruit before they are put in open ground. This will give ripe fruit by July 4th, and then, by pulling up plants covered with green fruit, and putting them under sash in the cold frames before frost in the fall, you can have fruit until the last of November.

The sweet-potato season may be lengthened by starting a few plants early and transplanting them into pots. I would use four-inch pots, and then, when the weather is warm and settled, water them thoroughly, and they can be turned out without disturbing the roots. A few hills of lima beans may be started in the same way. The hardest snap-bean I have grown is the black-wax, which may be planted in April in the latitude where I live, and I consider it also one of the best of the edible-pod varieties.—*Waldo F. Brown, in New York Tribune.*

THE FARMER A SKILLED LABORER.

Viewed from the lofty standpoint of the New York Hod-carriers' Union, considered from the hall of the Philadelphia Bill Posters' Protective Association, the prairie farmer is simply a clod-hopper. He is a man who decides to have corn, wheat, and potatoes, instead of wild grass, grow on a certain piece of land, and plants the seed that will produce them.

In point of fact, more knowledge and skill are requisite for prosecuting this craft than of any city artisan. It requires more skill to handle a plow than a trowel. It is more difficult to handle a reaping machine than a machine that turns out brick. Greater knowledge is required to sow grain than to turn the switches in a freight yard. Much more information, experience, and skill are needed to raise tobacco plants, to cultivate them, and properly cure the leaves, than to make them into cigars. Laying drain tile is more difficult than laying brick. Properly to remove a fleece from a sheep demands as great dexterity as to shave a beard from a face. The successful farmer is necessarily a skilled laborer. He is master, not of one trade, but of many, and a long time is required to learn each of them. He is also a merchant, and to be prosperous he must be a judge of

the quality of many things, and know how to buy and sell them to the best advantage.—*Rodney Welch, in the Forum.*

A NOVEL PROJECT.

When it was stated some weeks since in the newspapers that the building of a milk pipe line from a point in New York State to New York City was proposed, there was rather a general smile, and the matter was treated as a joke. The proprietors were, however, it seems, in sober earnest. A company with a capital of \$500,000 has, it is announced, been formed at Middletown, N. Y., for the purpose of constructing such a line. The proposed method of forwarding the milk is in cylindrical tin cans surrounded and propelled by water, and the promoters of the scheme assert that the time of transportation for a distance of 100 miles will not exceed an hour, while the profit will be about one cent a gallon. *Fire and Water* thinks if this sort of thing goes on, we need not be surprised ere long to find New York the converging point not only for oil, natural gas, and milk pipe lines, but of whisky ducts from the bluegrass regions, and beer ducts from Cincinnati, St. Louis, and Milwaukee. The pipe manufacturers may well feel cheerful at the prospect before them.—*Scientific American.*

Some one has been taking pains to show that aluminium is, after all, not a very useful mineral. But let us see: It never rusts or warps with heat. Why not, therefore, build houses of it? Wait a bit and you will have houses that shine like silver. It would make equally good railroad cars, as the weight is only one-third that of iron, though it has strength equal to iron. Its ductility allows it to be easily drawn out into wire. It is seven times better than iron as an electrical conductor. For cannons and rifles it has the advantage of taking off two-thirds of the soldier's burden. There is hardly any use made of heavier metals to which aluminium cannot be applied. The next century will be as surely the age of this new metal as it will be of electricity.

Art, in popular education, is simply the education of the eye and hands in correspondence with the brain. The discussion of this subject by *Forum* helps just now in the passion for manual culture, for it teaches us to avoid the mistaken idea that brain culture and manual culture are two distinct affairs. The fact is, no hand can cunningly work an ignorant brain, and an educated brain is always at odds with stupid hands. But how far can art culture be introduced as an element of popular education? Evidently not a child should be allowed to escape a thorough training in the elements of drawing. He is then prepared to comprehend architecture, furniture, gardening, and, to some extent, painting and statuary.

Gathered statistics of labor disclose the fact that the American workman is more productive, man for man, than the workman of any other nation; and this superiority is due to better food, better clothes, better homes, and a better education. To this may be added the fact that the American wage earner, if of good habits, has a reasonable hope of being able to better his condition. The above applies as well to the workman of the soil as well as to him who is confined to the shop or factory.—*New England Farmer.*

An eminent scientist has evolved the theory that water as an element to extinguish fires in large and high buildings is a failure. He claims that when combustion evolves a certain intense degree of heat the water thrown upon the flames emits a powerful volume of hydrogen which burns with frightful fury. This scientist sets up the theory that these fires must be treated in a different manner, and expresses the belief that gas will be the successful weapon with which to fight fire at some future day.

The best farmers are not always good business men, but they can learn if they try. True, it takes long years of training to make a good merchant, as it does to make a good farmer, but the man who has his wits about him is learning all the time. He looks into this and prys into that, he asks questions, notes facts, reads books and papers, notes the markets, sees which crops are paying best, and changes his plans accordingly. The ne'er-do-well was born in a rut, and loves nothing better than to stay in it.—*Colman's Rural World.*

KANSAS THRIFT.

Graham County has organized an immigration society.

The farmers in the vicinity of Oxford are building an elevator in that town.

The value of the total output of salt in this State for the last year was \$448,238.

Only one acre of tobacco was grown in Shawnee County last year, but it yielded 600 pounds, which was valued at sixty dollars.—*Topeka Mail.*

There is a good deal of coal talk in Wellington, and the talkers believe there is plenty of coal near by. The gentlemen who are digging at their own expense have unbounded faith.—*Wellington Express.*

A movement to introduce cotton growing in Cowley County is made by the offer of a party in Winfield to furnish seed free and establish a cotton gin on the assurance of the planting of 100 acres of cotton.

The largest single shipment of grain ever billed out of a railway station in Kansas is that of 111 car loads of farm produce to be hauled out of Clay Center to day. Kansas feeds the world.—*Lawrence Journal.*

W. B. Page, of near Ivamar, this county, who has been feeding 5,000 sheep this winter, has gone to New Mexico to buy that many more. He raised enough feed on his farm last year to amply feed 10,000 head, with the exception of corn, of which he had 5,000 bushels. He had nearly 1,000 tons of sorghum.—*Russell Journal.*

A number of Kansas City, Kan., capitalists are talking of starting a smelter at Muncie, a small town eight miles west of that city, on a tract of land owned by them. The tract where the company proposes to plant its works is known as the Ginter bottoms, and the total amount of property controlled by the organization is something over 3,000 acres.

Did any of our farmer readers ever stop to think that a basket of eggs, which can be carried by a ten-year-old boy, will bring more money in the market to-day than a load of corn? It is true; and the sooner our farmers realize that the money is in the chickens and pigs, and not in 14c corn, unless realized through this medium, the sooner will they lift the mortgages on their farms.—*Riley Regent.*

It is doubtful if there are to be found in the entire United States a better class of retail grocers to sell to than those in Kansas. The past three years have been hard upon them, and yet there have been fewer business failures noted in that State than in almost any other of the land, and this in the face of the fact that money was tighter in Kansas than anywhere else west of the Mississippi.—*St. Louis Grocer.*

Since the first of January seventy car loads of full-fed cattle have been shipped from the neighborhood of El Dorado, aggregating in value about \$70,000. Editor Murdock, of the *Republican*, has had talks with the growers, shippers, feeders, and bankers, and is inclined to the belief that the growers have done fairly well. A number of them state that they have received 25 cents a bushel for the corn which they have fed, besides a fair advance on the price paid for the feeders last fall. One farmer said that he realized 25 cents per bushel for 3,000 bushels of corn fed, besides \$6 per head clear profit on fifty head of cattle that he held for four months.

Senator Plumb has introduced into Congress a bill granting to C. J. Jones, better known as "Buffalo" Jones, for a term of years, a strip of neutral ground known as No Man's Land, south of the Kansas border. The land would be used by Mr. Jones for rearing bison. He has now on his western land a herd of eighty, which he would remove to No Man's Land if the lease were granted to him. Jones is the only bison breeder in the world. He has made attempts to cross the wild animal with the domestic cow. After repeated failures he succeeded in obtaining a cross between the bison and breeds of Shorthorn and Galloway cattle. He showed the Senate Committee some robes made of hides of the crossed animal. They are like the ordinary buffalo robe, but possess a lustre and varied color. "Buffalo Jones" says there are now only 1,100 bison left in America, and of these nearly 400 are in Manitoba and 500 are in captivity. The only native wild herd in the United States is that in Yellowstone Park, 200 in number.

CALENDAR.

1889-90.

Fall Term—September 12th to December 20th.
 Winter Term—January 7th to March 28th.
 Spring Term—March 31st to June 11th.
 June 11th, Commencement.

1890-91.

Fall Term—September 11th to December 19th.

TO SCHOOL OFFICERS.

The College Loan Commissioner has funds to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioners and the State Agricultural College. Address Jno. E. Hessian, Loan Commissioner, Manhattan, Kan.

LOCAL MATTERS.

Rev. Mr. Harrington, of Russell, led the chapel exercises on Friday.

The Domestic Science Club met with Mrs. Fairchild on Thursday afternoon.

The first game of foot ball for the season was played on the campus yesterday afternoon.

Mrs. Rachel Stewart, of Winchester, Kansas, is visiting her son and daughter at College.

Prof. Failyer was again called to Independence this week by the trial of the liquor case in which he is expert witness.

Miss Anna Adams, State Secretary of the Y. W. C. A., visited the College Associations on Tuesday and Wednesday.

Mr. Colburg, of Osage County, called at the College on Monday afternoon to arrange for a trial of his improved cultivator shovel-knife.

Rev. Mr. Bush, of Centralia, with Mr. Town, of the same place, while in attendance upon the Convention of Sunday School Superintendents, visited the College this week.

A number of writing desks are under way in the carpenter shop. Students are building them. Several revolving book cases have also been constructed this year by these young carpenters.

The Library received this morning 115 volumes of the London *Quarterly Review*; bound in half calf, and 33 volumes of Van Nostrand's *Engineering Magazine*, bound in half morocco.

Mrs. Winchip was received with enthusiasm yesterday after nearly three weeks of absence in attendance upon the death-bed of her father, Mr. Daniel Neuman, whose death occurred on Tuesday afternoon. The burial was in Topeka on Thursday.

The musical members of the Webster Society have organized a brass band of which the following is the personnel: J. A. Smallwood, solo clarionet; C. B. Selby, solo E flat; H. Leffingwell, solo B flat; H. Mattoon, second cornet; H. C. Bickford, solo alto; P. G. Keele, first tenor; O. A. Wright, J. W. Ijams, W. P. Tucker, second tenors; W. H. Sanders, baritone; A. A. Gist, tuba; G. K. Helder, snare drum; F. W. Ames, base drum; G. K. Thompson, cymbals.

The lecture yesterday afternoon by President Fairchild was an account of his visit to Yellowstone Park on his return from the meeting of the National Educational Association at San Francisco in the summer of 1888. The President briefly but consisely described a journey by stage 150 miles through the Park, the Mammoth Hot Springs, the Canon and Falls, and the Geyser being the principal points of interest visited. He told, in an interesting way, of the wonders of the Canon, which could be admired only from the top, and of the Falls of which it formed a part. A trip to the Geysers added much to the pleasure of the tourists. The geyser of special interest because always seen, is "Old Faithful," which, always steaming and bubbling when not engaged in active eruption, once every sixty-five minutes shoots forth a volume of hot water 150 feet in height, as well as occasional small stones, one of which President Fairchild picked up as a memento of his visit. A week was all too short to see all that was to be seen of this wonderful tract, sixty by seventy-five miles in extent, and many were the wishes for a longer vacation and a longer purse.

THE WEATHER FOR FEBRUARY.

BY ASSISTANT CHEMIST C. M. BRESEE.

The mean temperature for the month of February, 1890, was 29.97° , which is $.81^{\circ}$ below the average. Of the thirty-one other Februaries on our record, nineteen have been warmer and twelve colder; the extremes being 40.37° in 1882, and 21.44° in 1879. The highest temperature for the month was 70° on the 4th; the lowest, -5° on the 28th, a range of 75° . The warmest day was the 4th, the mean temperature for the day being 52° . The coldest day was the 27th, the mean temperature being 4° . The mean temperature of the observations at 7 A. M. was 23.75° ; at 2 P. M., 38.57° ; at 9 P. M., 28.75° . There were two cold waves. The first came on the afternoon of the 16th, about 5 P. M. The second, early on the morning of the 25th. This wave ushered in what proved to be the most intense cold of the month.

The precipitation was .237 inch, which is .743 inch below the average. The precipitation was almost entirely in the form of snow, over two inches of which fell during the month. The smallest February rainfall recorded is .00 inch, in 1861 and 1870; the greatest, 2.75 inches, in 1881.

The mean barometer for the month was 28.953 inches: At 7 A. M., 28.967 inches; at 2 P. M., 28.931 inches; at 9 P. M., 28.96 inches. Maximum, 28.482 inches, on the 20th; minimum, 28.44 inches, on the 23rd; monthly range, 1.042 inches.

There were four cloudless and seven cloudy days. Thirteen days were at least two-thirds cloudy, and fifteen days less than two-thirds cloudy. There were two fogs. The first of these occurred on the morning of the 3rd, and lasted until about 10 A. M.; the second was in the evening of the same day. They were both exceptionally heavy fogs, especially the one in the evening. The two together precipitated .029 inch of water.

The wind was from the north eighteen times; northwest, eighteen times; east, twelve times; south, ten times; west, nine times; southwest, seven times; southeast, five times; northeast, four times, and a calm once at the hour of observation. The total run of wind of the month was 5,812 miles. This gives a mean daily velocity of 207.57 miles, and a mean hourly velocity of 8.65 miles. The highest daily velocity was 374 miles, on the 25th; the lowest, 74 miles, on the 9th. The highest hourly velocity was 28 miles, on the 7th, between 7 and 8 P. M.

The table below gives a comparison with the preceding Februaries:—

February.	Number of Rains.	Rain in Inches.	Mean Temperature.	Maximum Temperature.	Minimum Temperature.	Mean Barometer.	Maximum Barometer.	Minimum Barometer.
1858		.46	26.10	63	-5			
1859	2	.61	32.25	63	-6			
1860	4	1.84	33.74	64	-6			
1861	0	.00	35.87	70	-9			
1862	1	.12	24.13	54	0			
1863	5	2.42	30.07	53	-4			
1864		1.10	33.20					
1865	4	2.21	35.16	58	13			
1866								
1867	3	2.01	32.32	57	-2			
1868	3	.18	27.71	69	-6			
1869	5	1.17	31.32	65	-4	28.75	29.25	28.30
1870	0	.00	34.09	69	-3	28.69	29.10	28.10
1871	6	2.48	35.07	71	3			
1872	4	.48	34.86	68	-10			
1873	2	.30	30.69	65	-4			
1874	1	.20	25.73	65	2	28.77	29.20	28.10
1875	4	.87	22.34	63	-10	28.77	29.40	28.20
1876	2	.65	36.03	69	-4	28.76	29.32	28.16
1877	5	.94	39.60	60	16	28.62	29.40	28.40
1878	5	1.44	39.18	68	6	28.65	29.12	28.23
1879		.75	21.44	58	-14	28.85	29.42	28.29
1880	1	.05	36.62	67	4	28.57	29.09	28.09
1881	3	2.75	22.20	44	-13	28.03	28.97	28.24
1882	2	.42	40.37	69	7	28.05	28.90	28.14
1883	4	1.75	25.76	65	-17	28.88	29.40	28.09
1884	3	.58	25.86	63	-6	28.86	29.19	28.16
1885	5	.55	21.56	60	-18	28.68	29.05	28.16
1886	4	.35	31.17	69	7	28.08	29.46	28.22
1887	6	1.18	28.00	72	-9	28.98	29.59	27.90
1888	2	2.67	32.12	71	-4	29.04	29.75	28.44
1889	3	.54	25.53	64	-10	29.15	29.86	28.47
1890	5	.24	29.97	70	-5	28.95	29.48	28.44
Means....	3	.98	30.78	63.53	-4	28.80	29.31	28.22

GRADUATES AND FORMER STUDENTS.

B. L. Short, '82, is in the City Clerk's office of Kansas City, Kansas.

A. O. Wright, Third-year in 1888-9, closed his school at Rocky Ford last week.

P. S. Creager, Third-year in 1886-7, hopes to return to his course in College soon.

J. R. McNinch, student of last year, hopes to re-enter College in the Spring Term.

J. F. Overfield, student in 1885-6, is traveling for a St. Louis glassware house, making his headquarters at Independence, Kan.

C. W. Thompson, '89, is at home in Edwardsville, aiding his father in the planning and build-

ing of a new dwelling house upon a beautiful site just north of the Union Pacific Railroad.

H. P. Wareham, student in 1887-8, announces that he will again engage in the farm implement business at Manhattan this summer.

Geo. Sorenson, student in 1886-87, writes from Peterton, Kan., where he is Station Agent on the Atchison, Topeka, & Santa Fe Railway.

J. G. Arbuthnot, Second-year in 1887-8, writes of extensive farming operations in which he intends to engage the coming season in Republic County.

L. P. Brous, '86, architect in Kansas City, Kan., is now in the County Surveyor's office of Wyandotte County, engaged in plating some extensive surveys.

Mrs. Ione Kinney Chase, student in 1881-2, called at the College yesterday, on her way to McAllister, Logan County, where her husband has purchased a large farm.

W. R. Browning, '89, called at Manhattan last Saturday evening. After spending several months in the mountains of Idaho, he is now with the same Union Pacific surveying corps in Southern Colorado.

P. M. Kokanour, Third-year in 1885-6, gives in the Manhattan *Mercury* an interesting account of his recent trip to Southwest Louisiana. It is rumored that Mr. Kokanour will start a newspaper in that State soon.

COLLEGE SOCIETIES.

Scientific Club.—President, O. P. Hood; Vice-President, J. T. Willard; Secretary, A. A. Mills; Treasurer, Abbie Marlatt; Board of Directors—J. D. Walters, J. F. Morrison, and O. E. Olin. Meets in Chemical Laboratory on the fourth Friday evening of each month.

Webster Society.—President, G. E. Stoker; Vice-President, S. C. Harner; Recording Secretary, H. W. Avery; Corresponding Secretary, C. A. Campbell; Treasurer, J. W. Ijams; Critic, W. T. Swingle; Marshal, B. H. Pugh. Board of Directors—G. E. Stoker, J. A. Davis, C. A. Campbell, W. S. Arbuthnot, E. R. Burtis. Meets Saturday evening at half-past seven o'clock.

Alpha Beta Society.—President, Marie B. Senn; Vice-President, W. W. Hutto; Recording Secretary, Delpha Hoop; Corresponding Secretary, Sadie Moore; Treasurer, J. N. Harner; Marshal, P. E. Westgate; Director, V. O. Armour; Critic, May Harman. Meets Friday afternoon at three o'clock.

Hamilton Society.—President, S. VanBlarcom; Vice-President, A. K. Midgley; Recording Secretary, A. E. Martin; Corresponding Secretary, F. A. Waugh; Treasurer, G. W. Wildin; Critic, F. A. Campbell; Marshal, R. W. Newman. Board of Directors—A. F. Cranston, F. A. Waugh, F. A. Campbell, U. G. Balderston, C. P. Hartley. Meets Saturday evening at half-past seven o'clock.

Ionian Society.—President, Julia Pearce; Vice-President, Doris Kinney; Recording Secretary, Lottie Short; Corresponding Secretary, Maude Whitney; Treasurer, Myrtle Harrington; Marshal, Kate Pierce; Critic, Fanny Waugh. Board of Directors—Effie Gilstrap, Phoebe Turner, and Alice Vail. Meets Friday afternoon at 3 o'clock.

Young Men's Christian Association.—President, W. H. Sanders; Vice-President, V. O. Armour; Recording Secretary, H. B. Gilstrap; Corresponding Secretary, R. W. Newman; Treasurer, H. Darnell. Meets in Horticultural Hall Sunday afternoon at three o'clock.

Young Women's Christian Association.—President, Christine Corlett; Vice-President, Ora R. Wells; Recording Secretary, Callie Conwell; Corresponding Secretary, Ava Hamill; Treasurer, Sarah Cotterell. Meets Tuesday morning at eight o'clock in Society Hall.

SOCIETY HALL, February 28th. The Alpha Beta Society was called to order by Vice-President Hutto. Miss Lockhart Harmian, music committee, then reported and the Society was treated to a beautiful chorus by the Alpha Beta girls. Mr. Armour then led in devotion, after which the members present answered to roll-call. Mr. Armour then read a beautiful selection entitled "A Mother's Contemplation of Her Child." Debate, question, "Resolved, That a tax should be put upon old bachelors for the support of old maids." May Harman opened the affirmative by showing that the responsible parties alone should support these lonely outcasts. If the bachelors only knew how to propose they would be fewer, and old maids would correspondingly decrease in numbers. Mr. Hutto argued the negative by showing that a woman will not accept the help of others. Such a law would make women lazy and contemptible so that they never could get married. The affirmative was further argued by Miss Jennie Green, and the negative by Miss Hoop. The Judges, Messrs. Borton, Walker, and Thompson, decided two to one in favor of the affirmative. Porter Westgate then presented a long but interesting *Gleaner*, with the motto "Such as ye gave, give I unto you." Recess. Music, by the A. B. Quintette. B. H. Pound then presented the news report. Extraneous speaking. Miscellaneous business. Assignment of duties. Report of Critic. Reading of the minutes, followed by congregational singing. Adjournment.

an experiment would easily show whether or not the negro is capable of colonization." U. G. Balderston told of the mortuary customs of the North American Indians, detailing many strange ways of burial. J. A. Rokes told of the rules and regulations of the State Penitentiary. W. S. Pope presented the news of the week. The most interesting incident was the photographing of the bottom of an oil-well after the explosion of a torpedo by a Pennsylvania photographer. Percy Leland discussed "Do we want Canada?" The programme ended by a song from F. W. Ayers. WAUGH.

SOCIETY HALL, March 1st.

The Websters were called to order by President Stoker, and roll-call showed a goodly attendance. T. E. Wimer led in devotion, after which the minutes of the last meeting were read, corrected, and adopted. After the initiation of Wm. Brown, C. A. Kimball gave a humorous selection, "He was Tickled," in German brogue. R. D. Brown gave a declamation, "The Mexican Race." Question for debate, "Resolved, that the Bellamy Scheme would be advantageous." E. C. Pfeutze was the first speaker on the affirmative. In this world there is enough for all to live on comfortably. It is a question of distribution. Bellamy's scheme is, that the world should unite as a family, and the Government act as a good father. All will be educated. There will be a feeling of sympathy throughout. There will be no social caste system. Each man will receive an equal amount of the enjoyments of life. No man will be required to work beyond the age of 45. W. T. Swingle then spoke on the negative. My opponents' statements are correct, but human nature is against it. Do we want to banish the need of a struggle for life? There will be a survival of the weakest, because the lazy and sick will receive as much as the manly and healthy. People cannot and will not be well educated, and the discipline required cannot be attained. The right to own property is a fundamental principle and cannot be crushed out. It is a restriction of personal liberty. Second speaker on the affirmative was L. S. Harmer. With this system personal liberty will not be abridged. Every man should have equal rights to natural resources, such as water, air, and land; all these he will have were Bellamy's scheme put into effect. It is obvious that it would be an advantage were every person educated. W. H. Edelblut, on the negative, commenced by ridiculing the probabilities of such a system. Rivalry would be annihilated. Competition is necessary to the life of humanity. Men will have no ambition to store up for posterity. Mr. Pfeutze then closed the affirmative. Under this system of good education and equality among men, there will be more produced by an equal amount of labor; and labor will receive its just and deserved compensation. There will be no miserly spirit shown under this system. Mr. Swingle, in closing the negative, said, there will be a certain class who will not go to school, and the lazier they are the better time they will have. Mr. Bellamy assumes his men will all be smart, but the assumption is impossible; on the contrary, there will be a set of lazy, ignorant, and worthless men, larger in proportion than with the present system. All will admit that such should not receive as much as honest and smart men. The Society decided in favor of the negative. Essay, D. T. Davies. The name of C. F. Pfeutze was proposed for membership. After a discussion by Mr. Wilkes, we listened to a cornet solo by C. B. Selby. Mr. Jno. Davis, as newsmen, gave a very spicy talk on the happenings of the week. New business followed unfinished business. Report of Critic, W. T. Swingle. Selection of question and assignment of duties. Reading of minutes. Adjournment 10:30. C. A. C.

CHEMICAL LABORATORY, February 6th.

The Scientific Club was called to order by Pres. O. P. Hood. The minutes of the last meeting were read and accepted. The Club was then entertained by the reading and discussion of several papers. Assistant Swingle being the only one to hand an abstract to the Secretary for publication, accounts for the shortage and delay in publishing.

The Brownian Movement.—In 1827, Dr. Robert Brown published an account of a peculiar trembling motion seen in various organic and inorganic substances when they are suspended in water in a state of very minute subdivision. This oscillatory movement, which is seen only with a good microscope, has been called after its discoverer, the Brownian movement. It has been known to continue for years in a cell hermetically sealed, and Dr. Beale has described a similar motion observed in the bubbles found in liquids imprisoned in the cavities of crystals. From these facts, it is assumed that movement does not depend on any chemical action or evaporation taking place. It has been found that the nearer the specific gravity of the substance approaches that of water the more active the movement is. It is said to be increased by the addition of a small amount of gum to the water, and to be diminished by the addition of sulphuric acid, or any substance which increases the conductive power of the water for electricity. The rate of subsidence of finely divided particles suspended in water is said to "depend greatly upon the rate of this Brownian movement."

Observations on particles of about 1.2 or 1.3 sp. gr. suspended in pure water showed that the smallest moved the most rapidly, and that when over 1-500 in diameter they did not show it at all. Particles 5-1000,000 to 8-100,000 in diameter moved, it was estimated, 12 to 20 times per second, and from 1-4 to 1-2 of their diameter at every bound. In general, they change their position but little, if at all, in the long run, since the motions being in no single direction, neutralized each other. A variation of 1 to 150 in the amount of white light did not perceptibly affect the movement. Likewise, a variation of about 1 to 2 in wave length of the light did not have any effect. The variation in quality of the light was obtained by using monochromatic light from nearly the extremes of the visible spectrum. Variation in temperature did seem to affect the movement. At high temperatures it was more active than at lower. Leaving out of consideration the fact that the inertia of the particle had to be overcome at every change in direction of the motion, it was calculated that the amount of energy liberated was very small. In one cubic inch, filled $\frac{1}{3}$ full of particles having the most active motion, it was estimated that only 1-1000 of a foot-pound of energy would be liberated in a year.

A. A. MILLS, Secy.

COLLEGE BUSINESS.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. Applications for extension of time on land contracts should be sent to the Secretary of the Board of Regents, at Manhattan.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Kellerman, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study or work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

Applications for Farmers' Institutes should be addressed, as early in the season as possible, to the President.

The Experiment Station should be addressed through the Director.

TERMS OF ADMISSION.

Applicants for admission at the beginning of the College year must be at least fourteen years of age, and able to pass a satisfactory examination in reading, spelling, writing, arithmetic, including percent age and interest, geography, and elements of English grammar. Those applying later in the year must show sufficient advancement to enter the classes already in progress. Every effort should be made to begin with the first day of a term, in order to advance with classes from the first.

Applicants of mature age who, for lack of advantages, are unable to pass the full examination, may be received on special conditions.

Applicants for advanced standing in the course must pass examination in all the previous studies of the class to be entered; but, if they have pursued such studies in other institutions of similar rank, they may receive credit for their standing in those institutions upon presenting a certificate from the proper officer, showing that their course has been equivalent to that of our class.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

Glen Elder is planning to found an Industrial Institute for orphans and neglected children.

United States Judge Brewer has given the court library of Leavenworth some 150 valuable works on law.

Robert Mitchell Post, No. 180, G. A. R. of La Cygne has presented the public school with a garrison flag.

State Superintendent G. W. Winans lectured yesterday evening at Herrington for the benefit of the school library.

Superintendent H. C. Bosley of the city schools of Fort Scott died Feb. 27th, after a brief illness, of quick consumption.

We have received a copy of the proceedings of the Kansas Academy of Science for 1887 and 1888, a neat and well-edited book, like its predecessors. Thanks.

The college orchestra of Bethany College at Lindsborg has given a series of concerts this winter to pay for its expenses. At McPherson they made \$35, at Marquette \$33.80, and at Lindsborg \$23.80.

The students of Parkville, (Mo.) College have invited Capt. Geo. R. Peck, of Topeka, to deliver the annual commencement address before the literary societies of that institution in June, and Capt. Peck has accepted.

Wesleyan University at Salina had a musical contest, limited to the music class, in which three prizes, \$108, \$22, and \$36, were given. The proceeds, \$50, was devoted to providing additional periodicals for the reading room.

The school children's collection for the Stevens County sufferers at Peabody resulted in forty-three and one-half bushels of potatoes, twenty-seven packages of clothing, two sacks of flour, three sacks of corn meal, and one bushel of beets.

Eugene F. Ware, of Fort Scott, has made the city a proposition to the effect that he will furnish \$5,000 with which to begin a free library in that city, provided the City Council will furnish rooms for the same. The library is to contain no works of fiction, and is to be limited to books of reference, scientific literature, and works of standard writers.

Prof. John Werrell, Principal of the High School of Kansas City, Kansas, has resigned, intending to devote himself to the study and practice of medicine, which he had left twenty-five years ago to become a teacher. Kansas has had but few educators who are known better among the profession, and few who would be missed so much as Werrell.

Hon. John A. Johnson, of Randolph, Kansas, told the management of Bethany College that if they would use every possible effort to liquidate its debt, he would in two years from that time donate to the institution \$1,500 as a stipend in memory of his deceased wife, Emma C. Johnson. We are pleased to note that the promise has been fulfilled.—*Lindsborg News.*

The library of the State Normal School is growing, nearly three hundred books having been added since June. Among them are Irving's complete works, Bryce's Commonwealth, Gibbon's Christian Heritage, several volumes to complete the International Educational Series, the Humboldt Library, Bohn's Classical Library complete, volumes necessary to complete the set of Education, and the Atlantic Monthly.

The Executive Committee which managed the recent meeting of the State Teachers' Association has placed its business report in the hands of the printer, and will give in a twenty-four-page pamphlet the Secretary's minutes, the list of members enrolled, and the full financial statement of the meeting. It is not proposed to send this report to any except the twelve hundred and forty-four members who paid their fees this year. Any member who does not receive this report card by March 1st, may infer that there is some mistake in his address, and should write at once to Treasurer J. H. Hays, Winfield.—*Quarterly Normal.*

St. Marys College, St. Marys, Kansas, claims to be the oldest institution of learning in Kansas, and indeed, west of St. Louis and the Mississippi. It was commenced on its present site in 1848, before Kansas City was laid out or California set-

tled, seven years before Kansas was proclaimed a Territory by the bill of Douglass. In fact, its origin is traced ten years earlier, to Pottawatomie Creek, or Sugar Creek, the first settled home of that tribe in Kansas, about fifteen miles from the eastern border, and sixty miles south of Westport, where two Jesuit fathers, Revs. Christian Hoecken and Felix Verredyt, with three lay brothers and four religious brothers of the Sacred Heart, opened schools on the Pottawatomie Mission. There rested the cradle of civilization in Kansas; and while its fertile valleys were known only to the fur-trading caravans of the Santa Fe, that modest home of education exerted a Christian influence on all the neighboring tribes, and the priests sallied out to visit the nearest white settlements, at Westport, Independence, Deep Water, Ft. Scott, and Ft. Leavenworth. These schools, where the children sat on logs, and ciphered on slates picked up on the side of the hill, gave birth to the modern College of St. Marys, with its piles of stone and brick buildings extending back in long perspective, or scattered around behind the avenues and walks and hedges that skirt the Union Pacific Railroad.

LABOR AND EARNINGS.

Every encouragement is given to habits of daily manual labor during the College course. Only one hour of daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their abilities and means.

All labor at the College is under the direction of the Superintendents of the departments, and offers opportunity for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed.

The shops and offices are opened afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed—outside of required hours of labor—upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates varying with services rendered, from eight to ten cents an hour. The Superintendents strive to adjust their work to the necessities of students, and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay-roll for the past year ranges from \$250 to \$400.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term time, or from other sources, for the larger part of their expenses. The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

MANHATTAN ADVERTISEMENTS.

R. ALLINGHAM, dealer in Fresh and Salt Meats. Special attention to student trade. Goods delivered free.

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MANHATTAN BANK.—E. B. Purcell, banker. J. W. Webb, Cashier. A general banking business transacted. Bills of Exchange issued on all principal cities and towns of Europe. All bills have personal, faithful, and prompt attention of our attorneys. Proceeds remitted promptly, at current rates of exchange, without any charge of commission.

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GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week-day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

IMPROVEMENT OF COUNTRY ROADS.

PROF. D. E. LANTZ.

DURING the past eighteen months there has been a great awakening of interest in the subject of highway improvement throughout the country. Strangely enough, the movement upon the question did not begin with those most interested,—the farmers,—but came from professional and scientific men. The agricultural journals and other periodicals have taken hold of the matter, and there are now few intelligent farmers who have not been thinking more or less upon the subject. Numerous articles have appeared, either in pamphlet form or in the magazines, calling attention to various features of the subject. Among the more important of these, I may mention, "Notes on the Making of Common Roads," by James B. Olcott; "The Road Question in Pennsylvania," by Saml. R. Downing, in the *American*; "Road Legislation for the American State," by Prof. Jenks, of Knox College, Ill., published by the American Economic Association; "Roads and Road-making," by Capt. Green, and "What I Know About European Roads," by Joseph Pennell, both published as supplements to *Harper's Weekly*; "Highway Improvement," an address by Col. Albert A. Pope before the Carriage Builders' National Association; "The Common Roads," by Prof. Shaler, of Harvard, published in *Scribner's Magazine*; "Municipal Engineering," by Prof. Haupt, of the University of Pennsylvania, read before the Franklin Institute, and published in its journal. These are sufficient to show some of the influences that are moving and moulding public opinion upon the subject. Gov. Beaver of Pennsylvania, early in 1889, in his message to the Legislature, called attention to the necessity for reform in road legislation, and the Legislature responded by the appointment of a road commission to revise and consolidate the laws upon the subject. Other State executives have followed Gov. Beaver in calling for better laws upon the subject, and in the State of Tennessee the farmers and other citizens are about to hold a large representative convention to consider the matter. The era of railroad construction is nearly ended, and that of public road construction, a far more important one, is about to begin.

There are many reasons why the people of our State have not seriously considered the subject of road-making. First, the soil and climate are in many localities so favorable to good roads that they almost construct themselves. Then, too, our energies have been absorbed in building railroads, school-houses, court-houses, and bridges, and in "booming" town sites. Land has been regarded as cheap, and so on our uplands, when a tract at one place becomes worn too deeply, just beside it the virgin soil offers a new road-bed as good as the old. These old tracks across our upland have disappeared from this section of the State, but even now our section-line roads drift about from one side to the other in a most unaccountable way. Our upland roads are usually good in dry weather, except that the grades are much too heavy. But the low lands and river valley roads offer some serious problems of maintenance in the rainy season. They are frequently impassable for loaded wagons for weeks at a time; and in the season of drought they often become exceedingly unpleasant because of dust.

Our State laws for the maintenance of public highways are not sufficiently liberal to provide for any great improvement. Indeed, under them, we might go on in the same way for fifty more years, and our highways would then be in a worse condition than now. What is the common practice? When the roads become impassable because of

deep ruts, the neighbors are called together by the township road-overs; and, if the weather is unfavorable for farming, they succeed in getting together two or three men and a team. Then the mud from the sides of road is scraped up into the middle into that rounded form so familiar to all. This work is usually done hastily, for the road overseer is allowed pay at the rate of one and a half dollars a day for but fifteen entire days in any one year. Usually, this important office, instead of being given to the one or two competent men in a township, is bestowed upon any one who is willing to take it. The chances are ten to one that he has never in his life seen a mile of good country road, and that he knows absolutely nothing about their proper construction.

But, of course, anybody can scrape a heap of soil up into the middle of the road. As long as road-building means nothing more than this, so long will the people have just cause to complain of the waste of public funds and the burdens of taxation.

DOUBTFUL REMEDIES.

BY PRES. FAIRCHILD.

WE laugh at a sick man who follows everybody's prescription for his rheumatism, even when he tries them in succession; but if he should attempt to swallow them all at once, we should want to appoint a guardian for his little remaining strength and wit. A somewhat similar feeling is aroused by recent agitation among farmers as to the cure of present financial stress and low prices. Doctors of all sorts of theories and of every form of practice are shouting out remedies, and the too prevalent disposition seems to be, like that of the dazed rheumatic, to gobble them all at once in the hope that something may hit the sore spot.

Is it reasonable to take such wholesale advice, whose conflicting remedies neutralize each other? Can general laxatives in the way of free silver and unlimited paper currency serve well with stringent times in restrictive business legislation, destruction of property in railroad stocks and commercial enterprises, and rejection of established channels of trade? To drop all figures of speech, it seems likely that the latest efforts to organize farmers for the full consideration of their needs, and their rights and duties, are to prove futile from the neutralizing elements of dissatisfaction brought together. No organization, however extensive, is worth its cost, unless its aims are definite and clearly understood. Farmers need to settle upon the one line of action that is needed first and follow it; then the time will come to settle another line, and act accordingly.

EXPENSES.

Tuition is free, and no general fee for incidental or contingent expenses is charged. In a few special departments of instruction, the following payments are made in advance to the Secretary:

In the term of Analytical Chemistry, students pay \$3 for the chemicals and apparatus used in their laboratory practice and analysis.

In the Printing Office, young men, in their first year, pay \$3 a term for office expenses. Advanced students have the use of the office for the work performed during the industrial hours.

In Telegraphy, young men pay \$3 a term for office expenses.

Young women are furnished both Printing and Telegraphy free of expense, these two offices, with the Sewing and Cooking Departments, being provided especially for their industrial training.

Lessons in instrumental music—two a week—are from \$10 to \$15 a term, according to its length; one a week, \$6 to \$8.40. One-half is to be paid to the instructor in charge with the first lesson, the other half at the middle of the term.

The cost of text-books at the book stores is, for the first year, about \$4 a term; for the second year, \$2.75 a term; for the third year, \$7 a term; and for the fourth year, \$5.50 a term.

The expenses for apparatus and tools to each student during the course are as follows: Drawing, \$3.50; microscope for Botany and Entomology, \$1.50; case, pins, etc., for Entomology, \$2.25; rules, in carpentry 25 cents, printing 25 cents. The total expense for these articles during the four years is less than ten dollars.

Board and washing are not furnished by the College. Board, with furnished rooms, can be procured in private families at from \$2.75 to \$4 per week. Some students board themselves at even less cost; and rooms for the purpose can be obtained at a rent of from \$1 to \$3.50 a month. Washing costs from 50c to \$1 a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$100 to \$200 a year.

MEATS AND LIVE-STOCK IN KANSAS CITY.

As a packing center, Kansas City is second in the world. The statistics quoted below illustrate the enormous number of cattle, sheep, and swine slaughtered; and how this most important branch of the city's industry has grown since its establishment here in 1868:—

Year.	Cattle.	Sheep.	Hogs.
1868	4,200	.....	13,000
1869	4,420	.....	23,000
1870	21,000	.....	30,000
1871	45,543	644	83,006
1872	20,500	690	180,000
1873	26,549	1,662	175,000
1874	42,229	1,901	70,000
1875	26,372	7,568	74,474
1876	23,765	32,369	114,869
1877	37,863	14,004	180,457
1878	18,756	6,529	349,997
1879	29,141	13,375	366,830
1880	30,922	14,719	330,07
1881	46,350	18,770	857,823
1882	65,116	28,056	749,083
1883	75,314	57,201	1,056,116
1884	66,250	141,241	1,114,450
1885	78,963	107,333	1,520,415
1886	101,489	86,163	1,701,903
1887	160,551	106,305	1,884,907
1888	361,252	181,864	1,605,000
1889	490,368	291,000	1,715,000

The total shipment of meat products during 1889 from this city amounted in round numbers to 524,000,000 pounds, the value of which was estimated at \$50,000,000. The packing industries give employment to over 10,000 men. Kansas City's reputation as a great supply center for salt, smoked, and fresh meats is not alone national, but world-wide.

Second in the world is also Kansas City's proper position as a live-stock market. The appended table of statistics will not only show the immense increase in the importance of this market during the past ten years, but what kind of stock has increased most rapidly:

Year.	Cattle.	Hogs.	Sheep.	Ho-ses and Mules.	Cars.
1879	211,415	588,903	61,684	15,829	20,702
1880	244,709	676,477	50,611	14,086	20,704
1881	285,863	1,014,304	79,924	12,582	29,030
1882	439,071	963,036	80,724	11,716	34,668
1883	400,780	1,379,401	119,605	19,860	45,470
1884	533,526	1,723,586	237,904	27,163	54,227
1885	500,627	2,358,718	221,801	24,500	63,213
1886	490,071	2,263,484	172,659	38,188	58,954
1887	569,224	2,423,262	209,616	29,600	67,752
1888	1,056,088	2,008,984	351,050	27,650	74,666
1889	1,229,401	2,084,539	309,445	34,115	84,435

It will be observed that it took 84,435 cars to transport these immense herds to this market, for the year 1889 alone.—*Grocers' Journal of Commerce*.

THE POMOLA, OR GRAPE FRUIT.

Very few people, says the Oroville *Mercury*, know the value of the grape fruit, and indeed, there are many Californians who scarcely know that there is such a fruit. The trees are quite ornamental, resembling in general appearance the orange, excepting the foliage, which is more luxuriant. The fruit is similar in appearance to a very large orange, with a pale yellow smooth skin. The trees bear large quantities of fruit and present a handsome appearance when ripe. To one who is not familiar with the valuable qualities of the grape fruit, the first taste will usually convey the impression of quinine. This bitter taste is chiefly contained in the white, pithy substance intervening between the skin and fruit sections. This can be removed as easily as that from the orange. The sections contain a cool, refreshing juice which has just a suggestion of bitter acidity. The juice contains anti-malarial principles, and its free consumption is highly recommended by those who have used it for that purpose. As a thirst-allayer, the grape fruit has been noted for centuries. In foreign countries, it has never shown an inclination to cross with other members of the citrus family, but in Florida it has mixed with the orange. It is possible that the orange might be increased in size if proper attention were given to a series of experiments in hybridizing the two.

HOME DOCTORING.

Although this is counter to the general belief, there is reason for feeling that the more non-professionals know about drugs the less they will trifle with them, and, as it is now, the danger is not so much from individual drugs as from mixtures, about the ingredients of which their consumers know absolutely nothing. Let people at large understand that a dose of castor oil is better in dysentery than all the cholera mixtures; that a little pepsin does more good in dyspepsia than all the bitters ever heard of; that the syrup of wild cherry bark is better in bronchitis than "rock and rye," and as good as most of the elaborate and costly cough medicines; that in acute rheumatism mustard pastes to the inflamed joints do more good than "horse liniment," or any other liniment; let non-professionals be taught such facts as these, and much suffering will be averted and without the

physician's province being entered. A word more as to quinine: If one think he needs it for its tonic effect, he should take no more on his own responsibility than one grain, three times a day. If a cold is coming on, take ten grains of quinine on going to bed, either at one or two doses, about two hours apart. These are about the only conditions under which he is justified in using the drug on his own responsibility. And if he uses it as advised, it is not at all likely to do him any harm.—*New England Farmer*.

THE BEST OF STOCK.

We boast of our free American farmers—intelligent, reading, thinking noblemen who do not need government supervision to furnish us with the best pure-bred sires at a nominal price; that is, cheaper than anyone can breed to a scrub. True, while many do intelligently select the best sires, and willingly pay what they are honestly worth, many others prefer to breed to cheap sires and raise scrubs. They would be benefited by the government prohibition of grade and scrub sires, and the country would be benefited by improved stock. Will not every American farmer rise to the full appreciation of his liberties, where none dare to dictate, and do for himself and for his country his duty to intelligently grade up to the best full-blood sires and banish scrub stock as the bar to our highest prosperity?—*Western Agriculturist*.

JUDICIOUS CROPPING.

A gentleman calling on the *Sentinel* a few days ago, was speaking of the profits of a diversity of crops. He said: "On one half acre of land, last year, I dug and sold \$35 worth of potatoes, and I have \$25 worth still on hand. As soon as my potatoes were dug I sowed the ground in turnips, and after using all I wanted, held over forty bushels. They were, I suppose, worth 25 cents per bushel. Thus you see I produced \$70 worth of stuff on one half acre of land." This gentleman sold the first of his crop of potatoes at \$1.25 per bushel. If he had had a good rock road to Kansas City, so he could have reached the early market, he could have sold his potatoes at twice as much. Good roads, intelligence, and industry are only requisite to prosperity in a country like this.—*Independence Sentinel*.

A DECISION IN FAVOR OF SHIPPERS.

Last week the court here decided that common carriers must deliver freight in good condition to its destination, even if shipped over another road. This was decided in the case of J. M. Hall vs. the Wabash, St. Louis & Pacific Railway Company. The goods were shipped via the Wabash from Macon, Mo., to a point in Kentucky. After the Wabash had delivered the goods to a connecting line, they were lost. The Wabash sought to shirk the responsibility, and asked the lower court to instruct the jury to exempt it from damage. The court refused to do this, and an appeal was taken. The lower court was sustained. This ruling indicates that common carriers are responsible for the safe delivery of goods to destination, no matter how many roads intervene.—*St. Louis Grocer*.

SHEEP VS. HOGS.

A correspondent of the *Western Rural*, giving his views on the comparative cost of raising hogs and sheep says, it will take twenty-five bushels of corn to raise and fatten a hog to three hundred pounds, worth to-day \$9.60, while the twenty-five bushels of corn would raise and fatten five sheep, worth \$25. Now, the sheep will pay for all its feed and care with its wool. What has the hog to offer for its care and keeping? Nothing but the "grunt," and our pork packers, with all their ingenuity and skill, have not learned to utilize that. I know from my experience in handling sheep for the past four years that money invested judiciously in sheep will pay for their feed and make one hundred per cent on the investment.

The Dahl process of sterilizing milk, named from its inventor, the late Mr. K. G. Dahl, of Norway, was recently demonstrated and explained in London. Fresh milk is stored in hermetically sealed cans which are then heated and cooled alternately till all organisms are destroyed. Milk thus treated is found after three years to be in every respect as good as fresh milk. It can be turned into cream and butter, and has the great advantage of being unsweetened. It will be of value for use at sea; and, above all, for the food of children, for it cannot possibly contain the disease germs so often present in fresh milk.

KANSAS THRIFT.

Natural gas has been discovered in Montgomery County.

The farmers of Chautauqua and Montgomery Counties, who raised cotton, made \$40 an acre from the crop.

A petition with 500 names attached has been sent to Washington, asking that Kansas City, Kansas, be made a port of entry.

Topeka and Atchison are great flour manufacturing towns. Last year they manufactured something like 700,000 barrels of flour.

Abilene prospectors found a little gas at the depth of 450 feet, but not in paying quantities. The drill is still boring and will go the depth of 3,000 feet.

The country is being canvassed by cattle dealers from abroad, and our local dealers are beginning to scour the hills and valleys for stock, all of which is an indication that the market is on the up grade.—*Osborne News*.

There will be a large acreage of flax cultivated in the northeast part of the County the coming season. It has been demonstrated to be a profitable crop, and well adapted to the soil and climate.—*Westmoreland Indicator*.

Our farmers have caught on to the poultry racket. It doesn't cost as much to raise a pound of poultry as a pound of hog, and the pound of poultry is worth the most money, and you get the eggs besides. See the point?—*Marysville News*.

The good prices which have ruled on broomcorn for several years past have engaged the attention of farmers once more, and the acreage for this year promises to be very large. Broom corn is as sure to reach a proper maturity in this country as wheat, and is much safer than corn. At moderately fair prices it will pay two or three times as much per acre as either wheat or corn.—*Stockton Record*.

The main building of the Pratt sugar refinery will be 70x130 feet, five stories high. The building will also have two wings on each side 50x80 feet respectively, two stories high. In addition to this, there will be a half dozen other buildings, such as boiler house, ware-rooms, char house, etc. The glucose factory, or starch house, will be a building similar in dimensions to the refinery described above.

Several of our neighboring towns are agitating the idea of prospecting for coal. Council Grove, some of whose citizens had a little coal experience several years ago, is watching the Alma shaft go down, and just as soon as it is proved that they have the black diamonds our people will go down into mother earth faster than the groundhog did just after seeing his shadow on the 2nd day of February.—*Council Grove Republican*.

The contract for putting in the incandescent light apparatus in the State house is completed. It is the biggest job of electric lighting that has ever been done in Kansas. There are 705 burners in the building, of which 385 are in the west wing. Representative Hall has 190 burners, of which forty-eight are on the large central chandeliers. These 190 lights can be turned on in an instant, illuminating the hall with a brilliancy and splendor that cannot be found in any other hall in the State. The Kansas Electric Company of Topeka had the contract for the wiring and furnishing, and the work was done under the management of its general superintendent, George J. Bayless, who is one of the most competent electricians in the west. The building will be illuminated by the Edison light.

We can count up a number of men in this locality, marked instances of men who have been making money right along during the past few years, in spite of poor crops, poor prices, and depreciating values. They are not money lenders, merchants, or middlemen, but plain, practical farmers, every one of them. There have been some branches of farming that have been quite profitable during the time when other branches were depressed. For instance, wheat and sheep-raising brought good money to the farmers during the time when cattle and corn was a losing business. This season the feeders of hogs and cattle will come out ahead: they cannot help it. A country like this is sure to be a prosperous and wealthy country, but the motto of every man should be, "owe no man anything."—*Howard Courant*.

CALENDAR.

1889-90.
Fall Term—September 12th to December 20th.
Winter Term—January 7th to March 28th.
Spring Term—March 31st to June 11th.
June 11th, Commencement.
1890-91.
Fall Term—September 11th to December 19th.

TO SCHOOL OFFICERS.

The College Loan Commissioner has funds to invest in school districts bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioners and the State Agricultural College. Address Jno. E. Hessian, Loan Commissioner, Manhattan, Kan.

LOCAL MATTERS.

President Fairchild lectured last evening at Fort Riley.

The Fourth-year Class completed Logic on Friday of last week.

K. C. Davis, a Third-year student, assists in the local work on the Manhattan *Republic*.

Lieut. Morrison will give volunteer students drill in guard duty on Friday afternoons for the remainder of the term.

The Dickens Club, of which several members of the Faculty are members, held a character party one evening last week.

Sadie Moore's illness threw her so far behind that she thought it best to drop out temporarily. She expects to teach this spring in Wilson County.

Prof. Popenoe is honored, while he honors the College, by being made Secretary of the American Horticultural Society, which recently met at Austin, Texas.

Rev. J. R. Nicholas, of Blue Rapids, led in chapel exercises Monday morning, and spent several hours in looking through classrooms, shops, museum, greenhouses, and barn, with evident appreciation of the work going forward.

Ex-Regent T. C. Henry, now of Denver, whose financial misfortunes of four years ago attracted much attention, has the prospect of full reinstatement in the property then taken from his possession by the Travelers' Insurance Company. The case involved nearly a million dollars.

Mrs. Fanny E. Rastall, President of the Kansas Women's Christian Temperance Union, visited the College on Thursday in the company of Mrs. Beverly of Manhattan. Mrs. Rastall spoke earnestly and entertainingly to the students in the chapel upon temperance in all things.

"W. H. Cowles, Attorney and Counselor, Knox Building, Topeka, Kansas," is the announcement of a card received this week from our former Professor of English and History. If he carries into his law practice the diligence of his college life, successful work cannot be wanting.

It is probable that the only peaches in Riley County, or, for that matter, in this part of the State, this season, will be grown in the College orchard, on trees which were carefully laid and covered last fall. Examination shows the protected buds to be in a healthy state.

Prof. Popenoe has received by express from Wood Holl, on the Southern Massachusetts coast, about ten gallons of sea animals, including hydroid polyps, holothurians, star fish, sea urchins, skates, sea robins, squids, crabs, lobsters, and one young shark, all of which are to be dissected by the zoology class.

Miss Bertha Kimball last evening entertained her classmates, the Seniors, at her parents' home on College Hill, where, in eating, social chat, music, and merry games, the hours passed rapidly; and when the guests at last left the hospitable roof it was quite late—so late, in fact, that the writer dare not hint at the hour.

Rev. B. J. Radford, of Cincinnati, has accepted the invitation of the Alpha Beta and Webster Societies to lecture on June 7th. Mr. Radford will be remembered by the students as a visitor during the State Sunday School Convention of the Christian Church last fall. He announces the subject of his lecture as "The Way and End of Culture."

Yesterday afternoon the Second Division of the Third-year Class gave orations in chapel. They are the following: J. N. Bridgman, "The Hero of the Aztecs;" Christine Corlett, "The Girl of Today;" F. C. Burtis, "Shall We Restrict Immigration?" Bessie Little, "Restrictions on Personal Liberty in Russia;" C. S. Criswell, "Money-Power in Politics;" H. Pearl Dow, "The

Influence of Women in Public Affairs;" K. C. Davis, "The Home of Blennerhassett;" T. C. Davis, "What Shall We Speak About in Chapel?"

The following bound volumes have been added to the College Library during the past two weeks: Manual of Bacteriology, E. M. Crookshank; Photography of Bacteria, by the same; Micro-organisms and Disease, E. Klein; Technology of Bacteria Investigation, C. J. Dolly; Ohio Forestry Bureau, Report for 1887; Proceedings of Experiment Stations Convention at Knoxville, Tennessee; The New World Book List; Kansas Railroad Commissioner's Report, 1889; Farmer's Guide, Stevens and Norton, two volumes; Transactions American Horticultural Society, Volume 5, 1888; Quarterly Review, 115 volumes; Van Nostrand's Engineering Magazine, to complete a set, 33 volumes; Chemical Technology, Volume 1,—Fuel,—Mills and Rowen; Handbook of Painting,—Italian Schools,—Eastlake, two volumes; Official Catalogue of United States Exhibit Paris Exposition; Galloway Herd Book, four volumes; Third Report United States Interstate Commerce Commission; Seventh Annual Report of Wisconsin Experiment Station. Total bound volumes in the Library, 9,657.

GRADUATES AND FORMER STUDENTS.

F. W. Dunn, '84, writes cheerfully from his farm in Aspen, Colorado.

L. E. Hadley, First-year, drops out of College this week to attend to farm business.

O. G. Harmon, Second-year in 1887, has returned to review studies in his previous course.

P. H. Fairchild, '86, took the degree M. D. last week at Bellevue Hospital Medical College, New York.

Scott Long, in first-year studies this year leaves College to take a position in his father's store in Manhattan.

M. G. Riddell, Third-year, is obliged to leave College this week to oversee the farm on account of his father.

J. B. Brown, '87, Fredonia, contributes to the *Western School Journal* an article upon "Beginning History."

Mattie Reed, student at various times for several years, hopes to return to continue her course in the spring term.

Eda Hederstrom, First-year, having been kept from College this term on account of her mother's illness, hopes to return in the Spring.

Winifred Brown, Second-year in 1887-88, writes from Fredonia that "all is well," and that she is still continuing her studies, especially drawing.

Laura Belle Willey, Second-year in 1885-6, writes from Rosedale, Kansas, in behalf of a brother who wishes to enter College next year.

Mrs. Nellie Cottrell Stiles, of Pavilion, and sister, Miss Mary Cottrell, of Wabaunsee, visited this week with their brother and sisters at College.

L. P. Brous, '86, called at the College on Monday. He will spend the next few months in a tour through the West, searching for a healthful location for a good architect.

D. E. Bundy, '89, now teaching at Parallel, will, as soon as his school closes, take a position as Instructor in Manual Training at the Government School for Indians at Ponca, I. T.

W. A. Corey, '84, Hunnewell, has an article in the March number of the *Western School Journal*. He suggests the study of lives and principles of great education in teachers' associations.

W. C. Moore, Class of 1888, now one of the rustling editorial trio of the Junction City *Union*, is working up plans for a stylish dwelling to be built this spring at that place for his own use. We do not know who is to share the cosy rooms with him.

W. E. Thackrey, Third-year, and J. E. Thackrey, Fourth-year, have engagements as Instructors at Government Indian Agencies. The former begins work this week at the Sac and Fox Agency, I. T., and the latter will go after two more weeks of teaching in this County.

COLLEGE SOCIETIES.

Scientific Club.—President, O. P. Hood; Vice-President, J. T. Wilard; Secretary, A. A. Mills; Treasurer, Abbie Marlatt; Board of Directors—J. D. Walters, J. F. Morrison, and O. E. Olin. Meets in Chemical Laboratory on the fourth Friday evening of each month.

Webster Society.—President, G. E. Stoker; Vice-President, S. C. Harner; Recording Secretary, H. W. Avery; Corresponding Secretary, C. A. Campbell; Treasurer, J. W. Ijams; Critic, W. T. Swingle; Marshal, B. H. Pugh. Board of Directors—G. E. Stoker, J. A. Davis, C. A. Campbell, W. S. Arbuthnot, E. R. Burtis. Meets Saturday evening at half-past seven o'clock.

Alpha Beta Society.—President, Marie B. Senn; Vice-President, W. W. Hutto; Recording Secretary, Delpha Hoop; Corresponding Secretary, Sadie Moore; Treasurer, J. N. Harner; Marshal, P. E. Westgate; Director, V. O. Armour; Critic, May Harman. Meets Friday afternoon at three o'clock.

Hamilton Society.—President, S. VanBlarcom; Vice-President, A. K. Midgley; Recording Secretary, A. E. Martin; Corresponding Secretary, C. A. Waugh; Treasurer, G. W. Wildin; Critic, F. A. Campbell; Marshal, R. W. Newman. Board of Directors—A. F. Cranston, F. A. Waugh, F. A. Campbell, U. G. Balderston, C. P. Hartley. Meets Saturday evening at half-past seven o'clock.

Ionian Society.—President, Julia Pearce; Vice-President, Doris Kinney; Recording Secretary, Lottie Short; Corresponding Secretary, Maude Whitney; Treasurer, Myrtle Harrington; Marshal, Kate Pierce; Critic, Fanny Waugh. Board of Directors—Effie Gilstrap, Phœbe Turner, and Alice Vail. Meets Friday afternoon at 3 o'clock.

Young Men's Christian Association.—President, W. H. Sanders; Vice-President, V. O. Armour; Recording Secretary, H. B. Gilstrap; Corresponding Secretary, R. W. Newman; Treasurer, H. Darnell. Meets in Horticultural Hall Sunday afternoon at three o'clock.

Young Women's Christian Association.—President, Christine Corlett; Vice-President, Ora R. Wells; Recording Secretary, Callie Conwell; Corresponding Secretary, Ava Hamill; Treasurer, Sarah Cottrell. Meets Tuesday morning at eight o'clock in Society Hall..

SOCIETY HALL, March 7th.

The Alpha Beta Society was called to order by President Senn. J. A. Zimmerman led in devotion. The Alpha Betas and visitors then listened to a song, "Love at Home," by the Misses Greene and Messrs. Hutto and Smith; Ella Barnes, music committee. Jessie Stearns read an essay, a review of Sir Walter Scott's "Lady of the Lake." A humorous selection entitled, "The Inventor's Wife," was rendered by Maggie Stewart. "Human prosperity demands that man should come in competition with his fellows," was the question for debate, J. A. Zimmerman and W. W. Hutto arguing the affirmative. Competition is the only way of regulating trade. It is a stimulus to invention. Aspirants for office are compelled to work hard to make themselves as well worthy of the position as are the opposing candidates. Competition is in opposition to caste and to monopolies. People the world over are desirous of being able to compete with their fellows in the business of life. J. N. Harner and Martha Cottrell argued the negative. The best plan is for people to co-operate, and then things will work harmoniously. The decision was rendered in favor of the negative. Recess. Music, an instrumental solo by Maud Parker. B. H. Pound then reported rare bits of news. Sarah Cottrell spoke in favor of pensioning all old soldiers.

Hattie Paddleford opposes the immigration of Chinamen to this country. Maud Gardner wonders why it is that schemes are so often formed to keep boys content on a farm, and no one troubles about keeping girls content on a farm. A spirited discussion of these topics by the Society followed. Discussion continued on the subject, "How many extras should we take at College?" It depends upon the strength of the student; his ability to apply his mind to study. Regular lessons should receive first attention and then recreation or work outside of College duties may be indulged in. In general criticisms, President Senn made a few "cutting and fitting" remarks for the special good of the Society. Miscellaneous business. Report of Critic problem, Nora Newell. After congregational singing, the Alpha Betas adjourned.

C. L. H. SOCIETY HALL, March 8th.

When Pres. Stoker called the Websters to order the room was nearly full, and when the question for debate was announced nearly every seat was taken. Mr. Wilkin was the first speaker on the question, "Resolved, That Farmers' organizations are beneficial to the members." In the United States, there are many corporations such as trusts and monopolies, which, from a financial point of view, are benefited by co-operation and organization. Does it not follow that the farmers would be benefited by organization? We must not lose sight of the fact that financial gain is not the only thing the farmer needs. One of the greatest helps of the farmer is good literature. At the meetings of farmers in Alliances and kindred organizations, agricultural literature is discussed, and each gets a better idea of what he needs in that line. The farmers are waging a deadly war against the trusts and monopolies which are crushing the very life out of all legitimate trade and commerce. Mr. Hartley was the first speaker on the negative. We agree with the affirmative that farmer must co-operate, but the way they are doing at present seems to indicate that not much real good will be derived therefrom. Mr. Mohler says in speaking of the reduction in rates that have been recently granted: "It is of no benefit to the farmer, since even if it did increase, as it does not, the price of corn to the producer, its tendency is to hurry the crop to market at ruinous prices, thereby enabling the supply to reduce itself to even terms with the demand." Mr. Currie continued the affirmative. Ever since farming has been recognized as an honorable business there have been organizations among the "tillers of the soil." The very fact that they have existed for centuries and are in existence now is an argument that they have a right to exist, and that they are beneficial to their supporters. Some one has said that "Organization is the sole remedy that can meet the needs of the farmer. Farmers must be organized whether they will or not. Pressure, dire necessity, drives them into organization." Mr. Robertson continued the negative. Organizations are not beneficial in that they are partisan. For instance, there is an Alliance which is Republican in its politics. In the same County there is another which is Democratic. Now, the two parties are working against each other, and we claim that if anything is to be accomplished the organization must of necessity be non-partisan. Mr. Wilkin in closing the affirmative says: Alliances are partisan, we admit, but only to the farmer. In twenty-five years the good effects can be more easily seen than now. To conclude, the organized farmers are benefited in four ways. They have been made stronger intellectually, their moral condition has been improved, and with it their social condition, and last, they have gained more political independence. Mr. Hartley closed the negative. We again claim that the alliances are partisan. A number have passed resolutions, condemning Senator Ingalls' conduct and refusing to support him for another term. In trying to overthrow the trusts and monopolies, they are simply trying to make a worse one. If they succeed in breaking down the trusts now existing, one will take its place and be known as the "Farmers' trust" and it will be far worse than those existing at the present time. By vote of the Society decided in favor of the affirmative. Declamation, E. M. Curtis. Essay, G. W. Crouch, "My fight with the bull." A declamation, "The unjust acquisition of territory," S. A. Waters. Essay, "Ostrich farming in the United States," E. S. Mudge. The principal articles in the *Reporter* edited and read by K. C. Davis, were "A Revelation," "The Nationalists in Prohibition," "What to Expect," and "The First Year of the Present Administration." An exhaustive discussion of the race problem, by G. K. Thompson, was followed by an interesting discussion on "The poor people of Holland," by F. J. Van Benthem. "The principal article of food is potatoes. The bread is usually black and of doubtful composition; however, it is quite nourishing. The city poor are not so neat as those in the country, but are well provided for in the winter. After hearing the news of the week, by R. C. Hunter, the Society passed to unfinished business. The final reports of the committees on the annual speaker and curtain were accepted and the committees discharged. The way of deciding the winning side in debate was done away with, and the old way, that of having three judges, was returned to. New business. Selection of question and assignment of duties. Report of critic. Adjourned, 10:30 p. m. C. A. C.

HAMILTON HALL, March 8th. G. W. Wildin spoke "The Downfall of Napoleon." R. A. Gilford read an extract from Irving descriptive of life and customs in the early days of New York. A good essay by G. T. Morrison argued that athletic training should be a required part of every college course. It is most needed here where most of the boys come from the farm than anywhere else. The first debater was Harry Gilstrap, who argued that the Kansas State Agricultural College should enter the State Oratorical Association. He told of the objects and methods of the Association. The object is to promote oratory in the State. Here, our rhetorical work is always slighted. If a higher incentive than a passing grade were held out, the work would be improved.

The local contest for choice of representatives would stimulate all the good speakers, and they in turn would enthuse the poorer ones. Our competition in the State Association would give us more patriotism toward our alma mater. It would give us a chance to associate with students of other colleges, and learn more of the State. It would give a better object of competition between college classes and societies, where they now compete in base ball, etc. That we should not enter the Association, was argued by Ralph Snyder. The shortness and primary nature of our course gives no place to oratory. Those who attended the recent contest say that we could not creditably compete. The stimulus gained would be an unnatural and a bad one, and the patriotism nothing but prejudice. Mr. VanZile, being chosen to assist the affirmative, says that not half of our graduates work a day on the farm after leaving college. Many of them don't know the names and locations of a half dozen colleges in the State. Whenever an organization is made for any end, e.g., base ball, the enthusiasm produced does good to all by making them work harder. C. P. Hartley was the second speaker on the negative. The one oration for the contestant at the State Contest is necessarily worked over for six months or more at the expense of other affairs. It is taught to him by the Professor of Oratory, and is delivered as from a phonograph, with no attentions but to inflections, gestures, and posing. Much money and time is wasted by the students in attending. He suggests that the State Oratorical Contest should be between the older orators of the State and should be extemporaneous. It would then be a test of practical oratory. People read more than they used to, and are influenced less by oratory. Oratory cannot compete with science. A scientific fact needs no oratorical statement. The debate was carefully reviewed on both sides by the leaders, and went to the Judges, W. S. Pope, A. O. Wright, and J. E. Thackrey, who decided unanimously in favor of the argument of the affirmative. F. M. Linscott edited and presented a lengthy *Recorder*, most of which was at length read. A. E. Martin's question for discussion, was, "Has President Harrison kept his pledges of civil service reform?" and though it was decidedly partisan it was good. W. A. Anderson was news boy. When his duty was performed and the critic had reported, and the assignment to duty had been made, the Society adopted the orders of the day at 10:30 P. M.

WAUGH.

SOCIETY HALL, March 7th. The Ionian Society was called to order by President Julia Pearce, Congregational singing. Invocation. Roll-call. Programme opened with piccolo solo by Fannie Waugh, followed by a selection read by Eusebia Mudge. Miss Pender favored the Society with a declamation entitled, "The Tropic Incongenial to Greatness." Miss Shaffer read an interesting piece entitled, "The Observance of the Sabbath in England." An instrumental solo was rendered by Miss Selby. The motto of the *Oracle*, which was presented by Miss Susie Hall, was "Don't try to be funny all the time." Among other articles it contained were a description of the new stamps, a short extract about bees, and a review of the "enjoyment social." A discussion was then opened by Lottie Short. Most of the members had something to say upon the subject presented. Just before adjournment the members answered in call to their names with instructive quotations. As the Corresponding Secretary was absent, the report this week is very brief.

M. E. W.

LABOR AND EARNINGS.

Every encouragement is given to habits of daily manual labor during the College course. Only one hour of daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their abilities and means.

All labor at the College is under the direction of the Superintendents of the departments, and offers opportunity for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed.

The shops and offices are opened afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

The labor of the students in the industrial departments is principal ly a part of their education, and is not paid for unless the student is employed—outside of required hours of labor—upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates varying with services rendered, from eight to ten cents an hour. The Superintendents strive to adjust their work to the necessities of students, and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay-roll for the past year ranges from \$250 to \$400.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term time, or from other sources, for the larger part of their expenses. The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

COLLEGE BUSINESS.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. Applications for extension of time on land contracts should be sent to the Secretary of the Board of Regents, at Manhattan.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Kellerman, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study or work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

Applications for Farmers' Institutes should be addressed, as early in the season as possible, to the President.

The Experiment Station should be addressed through the Director.

INDUSTRIAL TRAINING.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have Farming, Gardening and Fruit-growing, Carpentry, Cabinet-making, Iron-work, Printing, or Telegraphy. Young women may take Sewing, Printing, Telegraphy, Floriculture, or Music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second year and the fall term of the third year, upon the farm, gardens, and orchards. Young women take their industrials for one term of the first year in sewing, and for the winter and spring terms of the second year in the writer, Alsatian, and dairy.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

Prof. Gleed of the State University has an excellent article on "Western Farm Mortgages" in the last *Forum*.

Blue Rapids claims the honor of being the first town in Marshall County that hoisted the stars and stripes over the school-house.

Marysville has a night school for the study of German, which is attended regularly by forty-five pupils. The classes meet five evenings a week.

The School Board of Beloit was forced to declare a vacation of two weeks on account of the prevalence of malignant diphtheria among the pupils.

Rev. Joseph T. Duryea, of the First Congregational Church of Omaha, has accepted the invitation to deliver the baccalaureate sermon before the graduates of the State University.

Mrs. Belle Lynn, Superintendent of Schools of Graham County, died recently at 23 years of age. The vacancy in office was filled last week by the appointment of Miss Mattie Worcester.

The Norton County Teachers will hold the next session at the court-house in Norton, on Saturday March 22nd. Prof. James H. Canfield of the State University will deliver the evening address.

An even fifty teachers were present at the meeting of the Riley County Teachers' Association at Riley, March 1st. The programme was unusually rich. Among the papers read was one by Miss Emma Allen, on mathematics, and one by Mr. Willard, on school libraries. The usual paternal resolutions in regard to the *Western School Journal*, prohibition, and the Blair bill were adopted.

The Monday holiday is steadily gaining friends. Many colleges which not long ago looked upon the change with distrust have at last made the experiment, and so far as we can learn, not one is dissatisfied. Other institutions have the matter under consideration, and soon the Monday holiday will be the rule instead of the exception. Baker's experience justifies us in unqualified commendation of Saturday recitations and Monday holiday.—*Baker Index*.

The school statistics received by the State Superintendent of Public Instruction from the County Superintendents throughout the State show that the average length of school terms in every district in the State is six and a half months, which is nearly one-half month better than any previous year. The number of pupils enrolled in 1889 was also greater than any other year, and about 67 school-houses were built. For several years previous, the State had built a new school-house every day in the year.

The United States Bureau of Education is distributing No. 9 of the "History of Education"—Prof. Frank W. Blackmar's "History of Federal and State Aid to Higher Education in the United States." The monograph is a large volume of 343 pages, and is a very creditable and complete work—an honor to Kansas, for Prof. Blackmar, formerly of the John Hopkins University, is now a member of the Faculty of our State University. We understand that another monograph by the same author is soon to appear.

The Board of Directors of the Kansas State Historical Society, at its meeting January 21st, 1890, by resolution directed the Secretary of the Society to open correspondence with persons throughout the State, with the view to the formation of county historical societies. The main object of such a county historical society should be to study the history of the county; and of all its towns, neighborhoods and localities, and to preserve the materials of such history. Information in regard to the manner of conducting such societies may be obtained in the form of a printed pamphlet issued by F. G. Adams, Secretary of the State Historical Society.

Professors J. H. Canfield and F. W. Blackmar of the State University have instituted a new departure in the Seminary of Historical and Political Science, viz., the establishment of a correspondent membership system, by which prominent men over the State are brought into close contact with the University in its Department of History and Political Science. The scheme has only been in operation a few weeks, but already nineteen names have been secured. The idea is this: Any person in the State interested in topics with which

the Seminary deals, is invited to become a corresponding member. This involves the preparation and presentation before the Seminary by each member, once a year, of a paper on some topic in political science or economics.—*University Kansas*.

The Board of Regents of the State University have at last elected a Chancellor by calling Rev. Dr. C. F. Thwing, a Congregational minister from Minneapolis, Minn. The doctor has not yet accepted, but it is believed that he will in a few days. Dr. Thwing is a native of Maine, and is 37 years old. He graduated from Harvard in 1876 and became pastor of a Congregational church in Cambridge, Mass. In 1886, he was called to the pulpit of the Plymouth Congregational Church of Minneapolis. He is also editor of the Chicago *Advance*. His recommendations are of the most favorable kind, and it is said that he has had several offers of similar positions before. The press of the State is not unanimous in the endorsement of the selection, chiefly because he is an untried man in the field. All agree that he is a strong man, but many look upon his appointment as a doubtful experiment.

Parents should spare no pains to make home a cheerful spot. There should be pictures to adorn the walls, flowers to cultivate, fruit and shade trees, choice and entertaining books, and instructive newspapers. The tasteful planting of fruit and ornamental trees enhance the value as well as the beauty of a place. A plain, neat yard, with a few trees and shrubs planted about the grounds and properly kept, would change the appearance of many a place.—*Exchange*.

Less than ten per cent of the receipts of live cattle at the Chicago yards during 1890 would grade "good to choice!" Here is a text for a sermon six columns long on the advantages of raising well-bred cattle instead of "scrubs," but we forbear. If people will raise three-cent cattle instead of five-cent cattle they have no license to kick at the Big Four or anybody else when they only get three cents when they come to market. As one sows so let him reap.—*Breeders' Gazette*.

Debt is defined by Josh Billings as a trap which a man sets for himself, and deliberately gets into.

TERMS OF ADMISSION.

Applicants for admission at the beginning of the College year must be at least fourteen years of age, and able to pass a satisfactory examination in reading, spelling, writing, arithmetic, including percentage and interest, geography, and elements of English grammar. Those applying later in the year must show sufficient advancement to enter the classes already in progress. Every effort should be made to begin with the first day of a term, in order to advance with classes from the first.

Applicants of mature age who, for lack of advantages, are unable to pass the full examination, may be received on special conditions.

Applicants for advanced standing in the course must pass examination in all the previous studies of the class to be entered; but, if they have pursued such studies in other institutions of similar rank, they may receive credit for their standing in those institutions upon presenting a certificate from the proper officer, showing that their course has been equivalent to that given here.

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MANHATTAN BANK.—E. B. Purcell, banker. J. W. Webb, Cashier. A general banking business transacted. Bills of Exchange issued on all principal cities and towns of Europe. All bills have personal, faithful, and prompt attention of our attorneys. Proceeds remitted promptly, at current rates of exchange, without any charge of commission.

E. B. PURCELL, Corner of Poynz Avenue and Second Street, has the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered in all parts of the city and at the College, free of charge.

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GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week-day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

ENSILAGE, AND ENSILAGE CROPS.

BY PROF. C. C. GEORGESON.

THERE are still those who doubt the value of ensilage as food for stock, although the experience of feeders each winter piles the testimony thicker and higher in favor of an already established fact. Shall we wonder at these skeptics? There are still those also (now happily few and far between) who doubt the efficacy of vaccination as a preventive of small-pox, though it is nearly a century since Jenner proved the fact and established the practice. Ensilage has been publicly advocated only during the past ten years, and farmers are well (and favorably) known to be the conservative element of the population in every land. Of them, it may be said, perhaps with greater truth than of any other class of people, that they follow the scriptural injunction, and "prove all things, and hold fast to that which is good;" but as regards the use of ensilage, very many of them are too slow to prove its value to their own satisfaction, and to hold on to the practice of feeding it. And yet they will take nobody's testimony. What can be done for such skeptics? I would refer those who still shake their wise heads at the idea of preserving green fodder fresh and sweet through the winter, to their nearest progressive neighbor who has fed ensilage during the past winter, and let them there examine the article, and if it be good ensilage, watch the avidity with which the cattle eat it; let them handle the sleek, well-fed animals; let them take notes on the cost and capacity of his silo, on the cost of growing and cutting the silage, and on the amount consumed daily by each animal; and, if open to conviction, they will go away convinced. Then let them clinch this object lesson by making immediate preparations to grow a crop of silage for feed next winter.

Without further taking up the threadbare arguments pro and con, let it suffice to say that, in my opinion, no farmer can afford to be without a well-filled silo when he puts his stock into winter quarters. The experience of those who have tried it fairly is all in favor of the practice, and the testimony of the Experiment Stations, most of which have had something to say on the subject, is to the same effect. Here at the Kansas State Agricultural College we find ensilage an economical, and in all respects desirable, feed, which will enable us to keep much more stock than would be possible without it. My esteemed predecessor, Prof. Shelton, has long ago shown its value in Kansas compared with corn fodder (see Bulletin No. 6), and nothing need be added now on that point. It may, however, be pertinent at this time to make a few observations on points which have been developed in the course of experiments on the subject here at this Station.

First. Speaking for Kansas, there are practically but two crops which can seriously come under consideration as ensilage crops, and these are corn and sorghum. It is true many other crops can be grown which will furnish as good, or even a better, quality of silage, but no other crop has yet become known as practical in this State which, both quantity and quality considered, will yield an equal amount of nutrition to the acre. The notes on last year's experiments show that the yield of most varieties of corn and sorghum grown for ensilage ranged between 15 and 25 tons of green material per acre, and feeding on an average about 35 pounds ensilage daily to each animal, along with some grain feed, at a yield of 20 tons per acre, one acre will maintain a herd of 50 head of cattle (the number in the College Herd to which ensilage has been fed) for a period of twenty-three days. What else can be grown on that acre which will do equally well?

Second. The indications from this winter's feeding are that, on the whole, corn makes better silage than sorghum. One silo filled entirely with sorghum of several varieties did not prove to be as satisfactory as either of the two other silos filled with corn. The variety of sorghum which made up the greater bulk of this silage was the Golden Rod, and the undesirable qualities are attributed chiefly to it, but there were also cut in with it Late Orange, Kansas Orange, Early Orange, African, Honey Drip, and a few others. This silage proved to be dry and pithy, and was not relished by the cattle to the same extent as in the case of the corn silage. Only about 68 per cent of the total weight put into the silo was eaten by the cattle, the remaining 32 per cent being distributed under the three heads of loss by evaporation, spoiled, and rejected by the cattle. But even with these drawbacks the ninety-six tons which filled this silo, and were grown on less than five acres of land, maintained our herd of fifty head of cattle for ninety-six days, the average consumption inclusive of the loss from the three causes mentioned being exactly one ton per day. The matter is not yet settled, but so far as indicated by this silo, corn is superior to sorghum for silage in Kansas.

Third. But confining the question to corn, experiments here indicate that there is much difference in the weight of silage which the several varieties of corn will produce on an acre of ground. The so-called ensilage varieties, and in general the southern varieties, which produce large leafy stalks and a fair yield of corn, are to be preferred to the ordinary field corn of the North and West. Out of a couple of dozen varieties tried at this Station last year, the following six produced the heaviest weight per acre in the order given:—

	Tons per Acre.	Weight of Ears per cent of total weight.
Southern Horse Tooth	23.5	25.75
Shoe Peg	17.75	18.50
Brazilian Flour	17.33	9.75
Red Cob	17.	12.00
White Flat Ensilage	16.50	24.50
Bullock's White	16.	14.00

All were grown exactly alike on soil of uniform quality. The rows were three and one-half feet apart, and the stalks twelve inches apart in the row.

Fourth. Most writers who give advice on the subject state that the best results are obtained with ensilage corn when it is grown exactly like field corn. Last year's experiments at this Station do not bear out this assertion. The results show that ensilage corn ought to be planted much closer than field corn in order to obtain the best yields, not only of the green plant, but of ears. In field culture, it is pretty generally understood that if the rows are 3½ feet apart, the stalks should be from 12 inches to 16 inches apart in the rows in order to obtain the best yield of full-sized ears; that is, for the medium to large-growing varieties mostly planted in the West; but for ensilage, we find that the best yields are obtained when it is twice or even three times thicker on the ground.

To test this matter, a series of experiments were accurately made, mainly under care of Assistant Cotterell, with a variety which has been cultivated at the College for a number of years, and known as College Yellow Dent. The corn was allowed to ripen in order to weigh it accurately, and the fodder was not weighed till dry, but it shows with equal accuracy the proportion that would be available for ensilage at the several distances. The figures are in each case the averages of two plats similarly treated —

Distance between Rows, feet.	Distance between Stalks in rows, per Acre, bushels.	Yield of Corn, bushels per Acre.	Weight of Fodder, tons.
3½	16	59	2
3½	12	43	1¾
3½	8	72	2½
3½	4	73	3.1

Of the long series of figures obtained, only these few are given to illustrate the fact, which is

prominent throughout the experiment, namely, that the heaviest weights, both of grain and fodder, are obtained when the stalks are from four to eight inches apart, instead of from twelve to sixteen inches, as in the case of the field corn. There is, however, this important difference: that when the corn is thus crowded, most of the ears are nubbins; but they more than make up in numbers what they lack in size, and for ensilage, a given weight of small ears would be almost as good as the same weight in large ears. The influence distance had on the per cent of nubbins was as follows:—

At 16 inches, 25 per cent of the crop were nubbins.
At 12 inches, 40 per cent of the crop were nubbins.
At 8 inches, 50 per cent of the crop were nubbins.
At 4 inches, 80 per cent of the crop were nubbins.

But the shortest distance nevertheless gave the greatest yield of ensilage, both in stalks and ears.

Perhaps some of the foregoing points may interest farmers who are now planning their acreage of ensilage.

CONCRETE ARCHES.

BY PROF. J. D. WALTERS.

PUBLIC clamor for fire-proof buildings is constantly increasing; yet there is little known in regard to absolutely fire-proof contrivances or fire-proof construction that was not known a generation or, perhaps, several hundred years ago. Iron beams, with tile vaults between them, are by no means a new method of ceiling construction, while brick and stone vaults were largely employed by the old Romans; and as for tin shingles, ceiling iron, wire lathing, and asbestos packing, it can hardly be said that they are fire-proof, because they are usually fastened to wooden frames of some kind. It is quite a gain, then, if something actually new can be announced, especially when it is comparatively inexpensive.

Pending the construction of the large railroad station at Erfurt, Germany, where a number of small rooms were to be arched with brick, the contractor conceived the idea of employing concrete instead, i. e., a mixture of Portland cement and small gravel used in a semi-fluid state, and casting the arches over a form in one cast. Skewbacks were left in the brick walls at the springing line, extending two courses higher, so as to give room for the concrete to get a hold on the walls; and while filling in, the concrete mass was well rammed down. Fourteen days after the completion of the first ceiling, it was loaded with bricks and sacks of cement to the amount of more than six hundred pounds per square foot without suffering an injury, although after the load was on, a workman hammered with a pick on the concrete, close to the loaded portion, so as to provoke the cracking, if there had been any tendency to rupture.

Somehow there had never been an investigation of the strength of such arches before, though many may have been constructed in different parts of the world. It had been maintained all along in textbooks on engineering that a concrete arch is not an arch at all, but a lintel, without thrust, and that the common form, flat on top and arched beneath, is objectionable, as it gives least material at the center, where a lintel is most strained. The Erfurt experiment directly refuted this view. It was established beyond a doubt that a section of concrete, flat above and forming a regular segmental arc underneath, was by far stronger than one in which a portion of the under surface was parallel to the upper; showing, apparently, that the arched form, even with homogeneous concrete, causes the conversion of a large part of vertical pressure into lateral thrust, reducing so much the tendency of the load to break the concrete transversely.

All of these statements will be better understood and the deductions valued to a greater extent, when the extreme thinness of the concrete arch, together with the dimensions of the ceiling, is given. The width of the arch was something over seven feet, while it was eleven inches thick at the

springing and only four inches at the crown. It seems that these figures should teach more than a simple fact in applied mechanics. They evidently show, too, that so far as a saving of material, of weight, and of expense is concerned, the concrete arch is likely to become the arch of the building of the future.

GOOD ROADS.

The great fault with the roads in country towns is that they have not been built properly. In many cases even the loam has not been taken off, and in some cases no gravel has been carted on. Such roads cannot, in the nature of the case, ever be good until they are made over. It costs a good deal to make a road properly, but in many cases it is more profitable in the long run to have it so made. In some towns it is difficult to get good gravel or stone for road-building, but where there is plenty of good material there can be no excuse for not having good roads.

We cannot here go very much into the particulars as to road-building; but in making a road all loam should be taken out to depth of a foot and a half or two feet, after which there should be a foot or more of quite large stone put in over the whole of the dug out space, with drains of stone to carry off the water, then finer stone to within two or three inches of height required, and that may be covered with fine crushed stone or the best of gravel.

Such a road will last a good many years, and be in good condition at all seasons of the year. Such roads are expensive in the start, but will require few repairs. The sooner the American people come to appreciate and learn to build good roads, the better. Those who have traveled in the older countries come home full of praises of the roads. No money is better spent, and none will go further to give a town a good reputation, than that which is used in constructing and maintaining good roads.—*The Congregationalist*.

ROTATION OF CROPS.

Much has been written, says the *American Agriculturist*, on the subject of crop rotation, but we think its importance is not fully understood. One of the most popular systems of rotation in the winter-wheat sections of this country is, first, corn or potatoes; second, oats or barley; third, wheat; fourth, clover or grass, followed again by corn. Here we have three grain crops in succession. But the rotation is so convenient that it is not easy to improve upon it. The most serious objection to it is that it will not clean land as rapidly as is desired by a farmer who starts on a neglected, run-down, weedy farm. If the land is clean to start with it can be kept clean. But there is a great deal of land where, instead of oats or barley, an occasional summer fallow is thoroughly done, and wheat is sown in the fall with timothy grass at the same time with the wheat [when timothy is a sure crop], and clover in the spring, we can hope to get a large crop of wheat, and, what is of no less consequence, we have every reason to expect a heavy crop of grass and clover—and there is nothing that cleans and enriches land like a smothering crop of grass and clover. As before said, when land is once clean and in good condition, the rotation we have mentioned will enable a good farmer to keep it clean.

LESS WHEAT USED.

The *American Miller*, in discussing the question why the price of wheat is so low, suggests, among other things, that people do not eat as much wheat in the form of bread as they did years ago. It says: "The bill of fare of civilized man has expanded enormously of late years. The immense quantities of canned and preserved goods that are now consumed must have supplanted something. Was it not bread, at least very largely, that was misplaced by the entrance into the market of so much canned food, and its increasing consumption everywhere? We think, decidedly, that it was, and that the per capita consumption of wheat in the United States has been steadily declining for years. We doubt if it is now four bushels per capita; and this fact, with the other cited, will amply account for the refusal of wheat to advance in price in spite of the most favorable outlook." Yes, and there has been an enormous increase in the use of oatmeal as food, and, as our contemporary observes, any addition to the bill of fare takes a little off the wheat consumption.

KANSAS THRIFT.

The farmers who are having so much trouble with selling their crops at satisfactory prices are talking of stocking their farms next year and feeding their crops. It is probable that during the next few years stock-raising will be much more profitable than selling crops.—*Atchison Champion*.

One farmer who has lived in Harvey County for twelve years says that during that time he has not sold fifty dollars' worth of corn. He has fed his grain to his horses, hogs, cattle, and poultry. Last year he netted \$700 on hogs alone, and, far from running into debt, he purchased eighty acres of land three years ago and has since paid for it all. This would be a good plan for meeting "emergencies" all over the State.—*Halstead Independent*.

The general feeling among cattlemen, that there is money to be made during the next year or two in their business, is resulting in a very perceptible stiffening in the price of stock cattle. Young cattle are especially in demand, one lot of yearling steers that we heard of having been sold the other day for \$16 a head. This activity in the stock market has had the effect, also, of strengthening the price of corn in no small degree. Feeders are paying 17 to 18 cents a bushel, and one man told us the other day that he expected to pay 20 cents for several hundred bushels that he needed to carry him through. All of which goes to show that we are on the up grade.—*Parsons Journal*.

The press is still discussing the farming interest, and usually wind up their profound dissertations with the question, "Does farming pay?" The answer to this, as to every other enterprise or vocation, depends upon the individual. Some people make a miserable failure of anything and everything they undertake, while some others prosper and succeed at whatever they engage in. Take, for instance, the case of one Sedgwick County farmer who, although he can give no detailed account of the cost of raising corn, yet has raised little else for fifteen years, and has saved \$60,000 during that period. Phenomenal as this may seem to the inhabitants of any other State or country, it is by no means exceptional. There are scores of farmers—and by farmers we mean men who have tilled the soil and performed other farm labor with their own hands—in Sedgwick and adjoining counties who have done as well. The farmer who fails to make money in Kansas will fail anywhere else on earth, similarly situated. And what is true of farming is true of every other line of business known to legitimate commerce and industry.—*Wichita Eagle*.

The modern "limited" railroad trains have become simple business houses on wheels. In addition to dining, wining, bartering, bathing, etc., new wrinkles have been added, and the latest, as we learn from the *Office*, is "that stenographers are to be a regular feature of some of the trains. The Pennsylvania Company take the initiative, and announced a short time since that a bright young man, expert both in stenography and typewriting, would be placed on each of the trains of the Pennsylvania Limited, between New York and Pittsburgh, to take the dictation and transcribe on the typewriter the correspondence of the passengers who desire to avail themselves of his services. A compartment is fitted up on each train for this purpose, and the letters are mailed from the train as fast as they are written. The same train is provided with stock and weather reports.—*St. Louis Grocer*.

A practical dairyman, writing to the *New York Times*, says a mistake is often made in the use of hot water in cleaning dairy utensils. Hot water makes milk curd, insoluble, hard, and tough, so that when utensils are scalded before they are thoroughly cleaned from the remains of sour milk, the curd is solidified in the pores of the wood and becomes a permanent agent of mischief. Any alkali dissolves curd of milk; and after first well rinsing the utensils, and especially the churn, with cold water, a solution of common soda or salaratus (carbonate of potash) may be very usefully employed to complete the removal of all traces of the sour milk. Then another rinsing with cold water, followed by scalding with boiling water and a finishing dashing of cold water, always pure, will complete the work.

CALENDAR.

1889-90.

Fall Term—September 12th to December 20th.
 Winter Term—January 7th to March 28th.
 Spring Term—March 31st to June 11th.
 June 11th, Commencement.

1890-91.

Fall Term—September 11th to December 19th.

TO SCHOOL OFFICERS.

The College Loan Commissioner has funds to invest in school district bonds *at par*. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioners and the State Agricultural College. Address Jno. E. Hessian, Loan Commissioner, Manhattan, Kan.

LOCAL MATTERS.

The Seniors and Juniors measure strength today on the diamond.

Mrs. Popenoe returned on Tuesday from Topeka, where she spent a week visiting her sister.

Plowing and planting is the order of the week on the College farm as well as elsewhere in the vicinity.

President and Mrs. Fairchild are spending a day this week with their daughter, Mrs. Kirshner, in Salina.

Misses Webber and Judd, of the Junction City Schools, were guests of Mr. McCreary, on Saturday last.

The prospects are good for an unusually large attendance during the Spring Term, beginning March 3rd.

Pres. Fairchild spent Tuesday afternoon in Topeka looking after the printing of the Station Report for 1889.

Prof. Georgeson will present a paper at the Quarterly meeting of the State Dairy Association, at Abilene, April 4th.

The Farm Department is sowing some eighty varieties of oats in experimental plats, and will test several plans of culture for this crop as well.

V. O. Armour, Second-year student, attends the District Convention of the Y. M. C. A. at Marysville, today, as delegate from the College Association.

Prof. and Mrs. Hood entertained the members of the Third-year Class at their pleasant home on Wednesday evening, to the mutual satisfaction of all concerned.

The Annual Exhibition of the Webster Society, due next Thursday evening, is filling the thoughts of memoirs and awakening the anticipations of outsiders this week.

The Experiment Station has been asked to send its bulletins and reports to the "Commissioner of Revenue Settlement, and Director of the Department of Land Records and Agriculture, Fort Saint George, Presidency of Madras, India."

The new walk from the main building will run diagonally to the southeast corner of the grounds, opening into the head of Moro Street. It has been laid out, and construction will begin soon. The walk will be six feet wide, and composed of gravel and cinders.

Miss Belle Spear, Superintendent of Public Instruction in Rawlins County, is visiting her brother at College this week. She is a member of the Committee to settle upon uniform course of study for district schools, which met at Junction City this week.

A letter from Brisbane announces the safe arrival of Prof. Shelton and his family on February 13th, where they were met with every attention to comfort, and liberal allowance for all expenses of the long journey. The journey was in every way delightful, and the new sights in the strange land are pleasant experiences.

Mrs. Kedzie's reception for the Second-years, in which the Cooking Class entertain the Class in Agriculture with viands prepared in the Kitchen Laboratory under Mrs. Kedzie's provision and oversight, brought out the usual enthusiastic company on Thursday evening. They went home rejoicing that they rank as Second-years at least once in the course.

The College received by mail, this week, from Washington, D. C., a sack of "Government" seeds bearing two labels, one addressed to this institution, and the other to a Missouri town. Inspection of the contents showed that they belonged to the last named place, to which they were forwarded, and by this time the favored constituents

of Congressman Blank, under whose frank the seeds were transmitted, as they view their half pint each of peas, beans, and corn, shout praises of their representative for his knowledge of, and prompt attention to, the needs of the people!

In his chapel lecture, yesterday afternoon, Prof. Georgeson spoke entertainingly of his novel and, many of them, amusing experiences during a three years' residence in Tokio, Japan. After dwelling at length on the incidents of the voyage, the Professor described many of the business, social, and religious customs of the land of the Mikado, giving many facts not generally known to Americans, or concerning which they had formed wrong impressions which only a residence in the country can expel. The lecture was illustrated by a map of the Empire, as well as many curious articles of Japanese manufacture, which were made the subjects of much interesting comment after the address.

GRADUATES AND FORMER STUDENTS.

Miss Lillie Dial has dropped out of College.

Amy Grossnickle, student in 1887-8, visited her sister at College this week.

Miss Susan W. Nichols, '89, has just recovered from an attack of scarlet fever.

F. A. Doyle, student last term, is telegraph operator at Galva, McPherson County.

Miss Anna Kirby, First-year student, is called to her home in Abilene by the illness of her brother.

J. E. Payne, '87, is mentioned in the *Kansas Patron* as likely to commence a two-month's select school at Edgerton.

Geo. Gamble, Third-year in 1887, writes from Kansas City where he is employed as stenographer in the Union Pacific Railway office.

H. G. Rushmore, '79, is spending a few days in his old home at Clyde. His new home at Fort Payne, Ala., where he is secretary and treasurer of the Rushmore Hardware Company, is likely, he thinks, to be one of the most thrifty towns of the new South.

C. G. Elliott, student in 1886-7, writes from St. Louis, Mo., where he is studying medicine: "I love the K. S. A. C., and will always do all I can for it." This expression is followed by good wishes in the way of a subscription to the INDUSTRIALIST for a friend who has boys to educate.

SPRING TERM.

A term of eleven weeks begins Monday, March 3rd, during which, besides the regular classes of the four-years' course, there will be special classes in Arithmetic, English Grammar, Geography, Writing and Drawing, with special reference to students of mature age, who for lack of opportunities are unable to enter first-year classes in full. Teachers who desire to spend ten weeks in study of Algebra, Botany, Rhetoric, Entomology, Analytical Chemistry, English Literature, Physics, Political Economy, or Constitutional Law will find good classes beginning these subjects. Catalogues will be sent on application.

COLLEGE SOCIETIES.

Scientific Club.—President, O. P. Hood; Vice-President, J. T. Willard; Secretary, A. A. Mills; Treasurer, Abbie Marlatt; Board of Directors—J. D. Walters, J. F. Morrison, and O. E. Olin. Meets in Chemical Laboratory on the fourth Friday evening of each month.

Webster Society.—President, G. E. Stoker; Vice-President, S. C. Harner; Recording Secretary, H. W. Avery; Corresponding Secretary, C. A. Campbell; Treasurer, J. W. Ijams; Critic, W. T. Swingle; Marshal, B. H. Pugh; Board of Directors—G. E. Stoker, J. A. Davis, C. A. Campbell, W. S. Arbuthnot, E. R. Burtis. Meets Saturday evening at half-past seven o'clock.

Alpha Beta Society.—President, Marie B. Senn; Vice-President, W. H. Hutto; Recording Secretary, Delpha Hoop; Corresponding Secretary, Sadie Moore; Treasurer, J. N. Harner; Marshal, P. E. Westgate; Director, V. O. Armour; Critic, May Harman. Meets Friday afternoon at three o'clock.

Hamilton Society.—President, S. VanBlarcom; Vice-President, A. K. Midgley; Recording Secretary, A. E. Martin; Corresponding Secretary, F. A. Waugh; Treasurer, G. W. Wildin; Critic, F. A. Campbell; Marshal, R. W. Newman; Board of Directors—A. F. Cranston, F. A. Waugh, F. A. Campbell, U. G. Balderston, C. P. Hartley. Meets Saturday evening at half-past seven o'clock.

Ionian Society.—President, Julia Pearce; Vice-President, Doris Kinney; Recording Secretary, Lottie Short; Corresponding Secretary, Maude Whitney; Treasurer, Myrtle Harrington; Marshal, Kate Pierce; Critic, Fanny Waugh. Board of Directors—Effie Gilstrap, Phoebe Turner, and Alice Vail. Meets Friday afternoon at 3 o'clock.

Young Men's Christian Association.—President, W. H. Sanders; Vice-President, V. O. Armour; Recording Secretary, H. B. Gilstrap; Corresponding Secretary, R. W. Newman; Treasurer, H. Darnell. Meets in Horticultural Hall Sunday afternoon at three o'clock.

Young Women's Christian Association.—President, Christine Corlett; Vice-President, Ora R. Wells; Recording Secretary, Callie Conwell; Corresponding Secretary, Ava Hamill; Treasurer, Sarah Cotterell. Meets Tuesday morning at eight o'clock in Society Hall.

HAMILTON HALL, March 15th. The opening formalities are over. C. E. Jennings has been elected and initiated as a member, and we pass to the programme of the evening. G. C. Seymour's declamation tells of the Coliseum of Rome. Harry Moore's essay, "The Present Organization of Farmers," discusses the Farmers' Alliance. Now comes the debate. Will Yeoman is trying to prove that the multiplicity of religious

sects is favorable to Christianity. First, he gives us a short history of Christianity and its division into sects. Religious sects differ only in minor details, and all agree in the essential truths of Christianity. A doctrine that will do for one man will not do for another. It takes different methods to reach different men. Harmony in the church is promoted by separating into different sects the men of different beliefs. John Riddell in refutation says that in many small towns they have no religious services because members of different denominations cannot agree on any one minister. Continual contention exists between sects. Many men unite with an influential religious sect for policy alone. Now he is telling us a case of his observation where one denomination began a series of meetings and another one started up a series in competition. He says it broke them both up. He says that this was not to the promotion of Christianity, and because he can't say anything that is, he leaves the floor to Frank Beach. Frank thinks that if religious sects were not useful there would not be so many of them in existence, with new ones being formed every day. He says that there was no Christianity involved in the examples mentioned by Riddell. E. Blachley, the second speaker on the negative, tells a new story of sectarian division. The plan of the Christian Union, or Alliance, which is now being worked upon, originated in Japan where the people had a chance disinterestedly to observe the bad effects of sectarianism. He ends by reading a clipping from a paper telling how disastrously an attempt to hold a union meeting in Kentucky resulted. Yeoman is now ready to close the affirmative. Competition is the life of the church as it is of every thing else. When the church was represented by Catholicism, it fell of its own strength. The history of sectarianism shows its success. The Salvation Army, which has the characteristics of a sect, reaches many men who would otherwise go untaught. The combination of sects would make the church aristocratic. In closing the debate, Mr. Riddell carefully reviews the argument, but he brings no new illustrations. All three of the Judges vote for the affirmative. Now we have an oration. Walter Towne speaks on a new phase of the capital and labor question. Recess, ten minutes. The mechanical triumphs of the Nineteenth Century are told of in a declamation by Fred Smith. C. H. Houser, the music committee, has arranged for an orchestra of two violins, cornet, bass, and organ, and as soon as we can after music we have a discussion by John Coleman, a Prohibitionist who also believes in women's rights. Next, Samuel I. Borton examines the query, "Does the Protective Tariff Protect the Farmer?" and concludes that it doesn't. Coal and coal-mining is now told of by J. Lamm. Clay Coburn presents a review of the week's news, and the programme is over.

WAUGH.

SOCIETY HALL, March 14th.

The Alpha Betas assembled at the usual hour, and were greeted by orchestra music, Nellie McDonald, E. P. Smith, W. W. Hutto, and G. L. Clothier taking part; R. D. Whaley, Committee on Music. W. T. Payne was initiated. Select reading by Bertha Kimball. E. P. Smith gave a declamation. Debate, question, "Resolved, That cremation should be substituted for the common mode of burial." G. L. Clothier opened the discussion. After life is gone, the body must go through a process of destruction. In the grave, bacterian organisms will slowly devour. The more expedient method of destruction is to be recommended. As the dead cannot be benefited one way or the other, it is best to employ that method which would, at least, not be dangerous to the living. Plagues are perhaps often caused by the disease germs that have penetrated the earth. The most certain destroyer is fire. The burial of people in the earth originated in the idea that the body itself would be resurrected. R. S. Reed was the first speaker against cremation. We could have no monuments over our relatives or friends, or the heroes of the country—noting by which to remember them but a small amount of white powder. This method could be made to be expensive as well as the common mode of burial. Cremation does well enough in theory, but the practice of it outrages the finer sense of feeling. It means science against religion. Mr. Walker continued argument on the affirmative, and Mr. Zirkle on the negative. In case of poisoning, there could be no evidence. The affirmative was closed by Mr. Clothier. We should not look at the sentimental side, or, in case we do, it is not just as horrible to think of what must be the destiny of the body when put in the earth as to have it consumed by flames? Cremation means common sense against superstition. Mr. Reed closed the discussion. The Judges, Messrs. Hutto, Smith, and O. G. Harmon, rendered the decision in favor of the affirmative. The *Gleaner* was presented by Julia Green. Motto, "Waste not, want not." Recess. Music, quartette by Misses Hoop and Hopkins, Messrs. Smith and Hutto. Report of newsmen. The Society then engaged for sometime in parliamentary drill, and after the transaction of routine business, adjourned. C. L. N.

SOCIETY HALL.

The Webster debate, Saturday evening, March 15th, was characteristic one. T. E. Wimer affirmed that "the establishment of technical schools is necessary to the industrial progress of the United States." Technical schools are those which teach a certain art, and the science which underlies that art. Notwithstanding the fact, that, at first sight, agriculture is the most prominent industry in this country, if we look closely into the matter, we will find that this idea is erroneous. Manufacturing is the principal industry in the United States, as is shown by the fact that agriculture depends directly upon it; and in this very line is science a required associate of the art. There is no existing art which does not have for its foundation a science. The industrial schools are usually related to the arts only. Their object is to prepare for a higher course in a technical school. Our arts and industries would be in a sorry plight were it not for these higher institutions for special courses. S. C. Harner denied the statement that it is necessary to know the underlying science in order to be a skilled artisan. For instance: the boot and shoe makers know only their art: it is not necessary for them to know why a certain kind of leather is better than another, for certain purposes. It is sufficient for them to be acquainted with the fact without the knowledge of why it is the best. Nearly all of our successful business men have not received an education in technical schools. Most of our skilled carpenters and engineers never studied the theories of their trades. Industrial schools are needed in preference to technical institutions. "Practice makes perfect" is here very well illustrated. The man who knows his business and practices it, is the one who succeeds, and not the man who is merely acquainted with the theory. The affirmative was continued by F. W. Ames. "The object of the technical school is to produce men and women educated not only intellectually, but in the industries which are beneficial to the development of our country; therefore I say they are a necessity." W. T. Allen continued the negative. It is not true that science is necessary to an industrial career. It tends to make a man narrow. Think of the man who knew only the science of running an engine. It is an absurdity. The affirmative was closed by T. E. Wimer. How can a man do anything well, if he does not know the reason underlying the action? I deny that the majority of good citizens in the United States have not received technical training. All first-class workmen possess it. Men who possess a hammer, ax, and saw are as far from being carpenters as the east is from the west. Technical training does not make a man narrow, it makes him great in his line. This is an age of specialties. There was a time when technical schools were not needed, but we have reached a stage in civilization when they are indispensable. Let us have workmen that are educated for their work; let us have skilled workmen in our American shops, until we have American workmen in American factories, and American schools to furnish American products at American prices to American people. The last speech was made by Mr. Harner. Agriculture, being a prominent industrial art, may be taken as proof of the assertion that science as applied to arts is not necessary. Prof. Shelton says that "agriculture is an art," and it needs no science connected with it. We need a general education much more than a special one. The affirmative was given the decision of the Judges, Messrs. Jno. Davis, Arbutnott, and Mudge.

Declamation, W. T. Taylor. An essay on Henry M. Stanley by Chas. Green was followed by a recess of ten minutes. After a declamation by C. A. Campbell and a reading by F. F. Baxter, came discussions: The standing army of the United States, Ross Long; Protection and high license, D. C. McDowell. Newsman, E. W. Reed. Unfinished business. Society adjourned while under new business, 10:40 P. M.

C. A. C.

SOCIETY HALL, March 13th. The Ionians met with Pres. Julia Pearce in the chair. Singing. Prayer. Roll-call. Programme opened with a duet. Select reading, "My Hunt after the Baby," Fannie Waugh. Essay, Doris Kinney. Miss Kinney told us about the disadvantages of fast eating. Mary Pierce presented the *Oracle*. Motto, "Always Do Your Best." Among the articles contributed were: "Learn to Labor and to Wait," a poem, "Chiroclipes," "Review of troubles and pleasures of life," "Description of the work of the Experiment Station," "Trials of a Prep," "A Fourth of July Picnic," "The injustice shown the Preps." The debate was then opened. Question, "Resolved, That education is a necessary qualification for a voter," was argued on the affirmative by Jennie Selby and Myrtle Harrington, and on the negative by Effie Gilstrap and Kate Pierce. The Judges decided unanimously in favor of the negative. The programme closed with a duet. W.

THE INDUSTRIALIST.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

The Baker *Beacon* has a new head—quite tasty. The School Board of Atchison will be composed entirely of ladies.

Governor James Humphrey has designated Thursday, April 10th, as the Arbor Day.

The State University will soon have another weekly paper—the third.

Kansas City, Kansas, has a Zodiac Club, but though it meets after dark, it does not concern itself with astronomy.

The poor wood cuts which have been creeping into the weekly *Star* of the State Deaf and Dumb Institution do not help the good looks of the paper. Throw 'em out!

Superintendent Walker, of the State Deaf and Dumb Institution, reports the two singing classes at his school as doing well. It must be interesting to hear a deaf class sing.

The Allen County Teachers had a good meeting at Iola, March 1st. A large number of non-teaching visitors were present. The next meeting will be held on April 5th, at Humboldt.

The Nebraska State Teachers' Association will hold its twenty-fourth annual meeting at Lincoln, on March 25th and 27th. It is expected that Kansas will be represented by a large delegation.

Judge Brewer, whose recent appointment to the bench of the Supreme Court of the United States was the subject of so much controversy in the State, was once President of the State Teachers' Association.

Prof. Karl Preyer, of Baker University, gave a musical recital at Lawrence last Saturday a week ago. There were about seventy-five invited guests present, including the Faculty of the State University.

W. H. Smith, twenty years old, a teacher in West Bend District, Jewell County, committed suicide Wednesday at the farm house of Mrs. Pate, where he boarded. He left a note saying, "Why wait for the gathering gloom? Bury me by the side of my mother."

The last number of the *Academy Student* of Eureka publishes an excellent paper on the "Relation of Politics and Religion to Our Public Schools," prepared by Prof. Geo. C. Heritage, of the Eureka schools, and read before the last County Teachers' meeting.

Baker University had an excitement last week on account of a case of "boot-legging." It seems that an ex-student sold among the boys whisky, for which he was arrested and sent to the county jail. About a dozen students have been subpoenaed as witnesses against him.

The Southeastern Kansas Teachers' Association, to be held at Parsons, on March 26th to 28th, promises to become a grand gathering. A large flag is to be presented by the people of Parsons to the county which sends the greatest number of teachers. All participants will be entertained.

The Indian pupils of Haskell Institute at Lawrence have had an old-time fight, tribe against tribe, in which knives and revolvers were freely used. The police force of the city had to be called out to quash the disturbance and to arrest the ringleaders. Several of the young barbarians will be expelled to make life safe.

An exchange says: "J. W. D. Anderson, of Elk City, is said to have a larger collection of books by Kansas authors than any other collector in the State. Anderson is a minister with somewhat radical ideas; but is, nevertheless, a companionable and wide-awake fellow." We guess that George Martin, of the Kansas City *Gazette*, can double or treble Rev. Anderson's collection.

President J. H. Canfield, of the National Educational Association, has sent us an outline programme of the next session, to be held at St. Paul, Minn., July 8th to 11th. The department papers are not all arranged for, but the programme of the general meetings is quite full. Among the long list of good things, we notice papers on "The Place and Function of the Agricultural College," by D. L. Kiehle, of Minneapolis, and Lewis McLouth of Brookings, S. D., the discussion of which is to be led by M. L. Lernald, of Orono, Maine, Geo. T. Fairchild, of Manhattan, Kansas,

and W. H. Chamberlain, of Ames, Ia. On Friday evening, the "Race Problem" will be discussed, in which the Hon. Henry W. Blair, U. S. Senator from New Hampshire, himself will take a part. The subject of compulsory laws and their enforcement will also receive a share of attention.

Dr. Thwing, of Minneapolis, Minn., whose election as Chancellor of the State University the INDUSTRIALIST mentioned last week, has been at Lawrence since then to look the ground over. He was greatly pleased by all he saw, but declined to accept the tendered position, though the Board offered to raise the salary from \$3,000 to \$5,000. This leaves matters as they were before the meeting of the Board, and it is not likely that another name will be considered before the close of the year in July. The Doctor did not give reasons for his refusal to accept, and all kinds of speculations are indulged in by the papers of the State to find a plausible excuse for him. Many think that he simply wanted a "boom"; others, that he is expecting a better offer from some other institution; and others, still, that he found the institution had excellent material for the Chancellor's office right at home.

Prof. Cragin, of Washburn College, has returned from Kiowa County, and is much elated over the success of his trip, he having brought back with him the fragments of a rare and valuable meteorite, the largest known to have ever fallen in Kansas. The largest piece is about the size of a small Kansas pumpkin, and weighs 466 pounds; the next piece is about the size of a fair-sized Kansas sweet potato, and weighs 350 pounds. A few hours after Prof. Cragin had concluded negotiations for the find and had taken it into his possession, a professor of geology, representing an eastern college, arrived on the ground, and not knowing of the completion of the transaction, offered the gentleman on whose farm it was found a high price for a portion of the meteorite. There was in all about 1,300 or 1,400 pounds, and of this Washburn College gets between 1,000 and 1,200 pounds, some portions of it having been previously carried off.—*Topeka Capital*.

CLASS ANTAGONISM.

Already are the tillers of the soil and those engaged in the production of stock of any kind, prejudiced against all who buy or handle or consume their products. The farmer is either making an Ishmaelite of himself or has concluded that every man's hand is against him. We are by this means antagonizing producer and seller against the buyer and consumer, and it must be evident to any thinking man that this thing can be carried too far. We have sufficient antagonism already, class is arrayed against class, man against man, business against business, the factory against the producer, and it bodes no good to either. Life always was and ever will be a contest, it is true; the strong contend with the weak and hold them in the vice-like grip of mastery. We may, however, just as well view the situation as intelligent men and not run a tilt against inexorable laws. Intelligence holds the key to the situation, and one may just as well put a dwarf against a giant in physical efforts as to force the situation by supposing that ignorance has any show when opposed to intelligent training. We have ever sought to place readers of the *Rural World* in possession of thoughts to think about, and here is one they may ponder long and well.—*Colman's Rural World*.

THE THIMBLE IN HISTORY.

It is a Dutch invention, and was taken to England in 1695 by one John Lofting. Its name was derived from the words thumb and bell, being for a long time worn on that member, and called the thimbel; only within the last 150 years has the word "evolved" thimble. All records say that the thimble was first worn on the thumb, but we can scarcely conceive how they would be of much use there. Formerly they were made of brass and iron only, but of late years steel, silver, gold, horn, ivory, celluloid, and even pearl and glass have been used in their manufacture. A thimble owned by the queen consort of Siam is shaped like a lotus, of solid gold, thickly studded with diamonds, which are so arranged as to form the lady's name and the date of her birth and marriage. Queen Victoria has a very valuable gold and diamond set thimble upon which are engraved many historical scenes from English history.—*Exchange*.

UNIVERSITIES OF THE WORLD.

Norway has 1 university, 46 professors, and 880 students.

France has 1 university, 180 professors, and 9,300 students.

Belgium has 4 universities, 88 professors, and 2,400 students.

Holland has 4 universities, 80 professors, and 1,600 students.

Portugal has 1 university, 40 professors, and 1,300 students.

Italy has 17 universities, 600 professors, and 11,140 students.

Sweden has 2 universities, 173 professors, and 1,010 students.

Switzerland has 3 universities, 90 professors, and 2,000 students.

Russia has 8 universities, 582 professors, and 6,000 students.

Denmark has 1 university, 40 professors, and 1,400 students.

Austria has 10 universities, 1,810 professors, and 13,600 students.

Spain has 10 universities, 380 professors, and 19,200 students.

Germany has 21 universities, 1,020 professors, and 25,084 students.

Great Britain has 11 universities, 334 professors, and 13,400 students.

The United States of America has 360 universities, 4,240 professors, and 69,400 students.

COLLEGE BUSINESS.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. Applications for extension of time on land contracts should be sent to the Secretary of the Board of Regents, at Manhattan.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Kellerman, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study or work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

Applications for Farmers' Institutes should be addressed, as early in the season as possible, to the President.

The Experiment Station should be addressed through the Director.

MANHATTAN ADVERTISEMENTS.

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GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

VARIETIES OF SORGHUM, AND THE TIME OF PLANTING SORGHUM.

BY PROF. G. H. FAILEYER.

WHERE so much attention is given to a crop which it is highly desirable to improve in quality, as is the case with sorghum, many new varieties are brought to the attention of growers. There are great and praiseworthy efforts put forth to find better varieties of sorghum, as well as to secure improved strains of well-known sorts or crosses of these. While small quantities of the seed of some of these really improved sorts may be accessible to farmers, the great bulk of the seed on the market must be of kinds that have been grown for years, or of reputed new sorts that it is hoped may prove good on trial.

There is a tendency, where the need of something better is universally felt, to take up with a new thing without sufficient inquiry into its merits. This disposition has lead many to accept new varieties to the exclusion of those whose excellence has been shown by repeated trial.

It is the object of this article to caution sorghum raisers against blindly accepting the new on anything more than an experimental scale unless its quality is vouched for by a reliable and intelligent grower. During the past two years there have been grown by the Experiment Station, and tested for quality as a sugar plant, a very great number of kinds of sorghum. Some of these are very small, and ripen very early; others are very large, and do not fully ripen before frost unless the autumn is an especially favorable one; while many are intermediate in size and time of ripening. The latter have been superior in our experience. The very small kinds that ripen early have been much sought because they will serve to lengthen the working season. The shortness of the season has been one of the drawbacks to the sorghum industry. An expensive plant is required to lie idle and rust out through more than three-fourths of the year. Therefore, a kind that would ripen early enough to permit work to begin a few weeks sooner would be a great boon. Whiting's is one of these extremely early sorts. It has proved to be worthless with us. The same may be said of Early Tennessee. The very large sorts have seemed attractive because of the great yield. Among these may be named Honduras, Golden Rod, and some of the Chinese varieties. But none of these large sorts have given encouragement. The stalks yield only a moderate quantity of juice, and the sugar content is medium to low. The various Amber canes, Early Amber, White Amber, Swain's Early Golden, etc., are among the best early canes. The yield is fair; the juice is good in quantity and quality. In our experience, unlike that reported by others, Early Amber which ripened early maintained its good quality throughout the season. Of later sorts, the various orange canes and Link's are among the best. These are standard sorts, and few of the new kinds coming to our notice equal them. Link's is a good cane, but a little slender and somewhat late. The Kansas Orange stands up well, is rich in sugar, affords a fair quantity of juice, and ripens about the middle of the season. There are other kinds that are good and give great promise, but there are at present no reasons for substituting them for the above well-known sorts, unless it be in trial quantities.

To lengthen the working season, some aim to plant early. Last year several varieties were planted at several different dates. It was found that the very earliest plantings were rather unsatisfactory, made slow growth, and were not earlier in ripening than that planted two weeks later. But obviously the season, whether it be cold and back-

ward or the reverse, will determine much in this respect. The young plants are small, and grow very slowly. Care should be taken to give them an equal show with the weeds. In general, sorghum will not bear as early planting as corn.

THE COUNTY COURSE OF STUDY.

BY PROF. O. E. OLIN.

AS a people, we move very slowly in the direction of reform. This conservatism is probably a good thing for all concerned; for it keeps us from trying doubtful experiments, and makes the friends of a new system prove its advantages before we give up something old and tried.

There is now a concerted movement by the school superintendents of the State looking toward the adoption, by counties, of a course of study for district schools. This is a reform that has been pressed for years, with good results wherever tried. Why should not a district school course, that fulfills the requirements of the State, have an objective point, be completed just as much as a high school course or a college course is completed? Why should not the boy, when he leaves the common school, have such grounding in the fundamentals of an education that the lines of industrial, commercial, academic, college, or professional training are all open to him? Why, indeed, when it can just as well be so? There is ample time in an average school life, if used systematically, to complete the district course, and do it thoroughly. If we can get rid of the intellectual waste of going over and over certain studies, Sisyphus like, we can even add to the course; but whether we do or not, the pupil will be placed in a position where his choice of life work will be helped and not limited.

No man or woman with pretensions to culture can be ignorant of mathematics, geography, history, elementary science, and the principles and literature of the mother tongue; but without some incentive or some authoritative guide it frequently happens that one of these is slighted at the caprice or prejudice of the pupil. Every academy or college has experience with those who have thus omitted some essential element of an education. Weary months and sometimes years must be spent to bring up their work; and it not unfrequently happens that the ignorance of a boy of twelve or his parents' lack of wisdom proves an effectual bar to his progress at twenty; for it is peculiarly discouraging to a man or woman just ready for active life to go back to elementary work.

Sometimes a boy's friends object to his spending time on one study because of a supposed genius for another, and he bends all his efforts in one direction. This is all right after the boy has laid the foundation for a good education, but is worse than unwise before. He runs the risk of ending in mediocrity in his own line, or of failing to use high talents successfully from ignorance of surrounding conditions. In these days, the work of the specialist is begun only when a broad common school education is finished.

I believe that the educational mistakes of young men and women, and the chances of failure, will be considerably lessened if boys and girls can be induced to persevere in a course of study that will not only develop their intellectual powers systematically but that will, sufficiently early in life, give them perfect freedom of choice in occupation.

The county common school course seems to be a great help in this direction. The pupil is encouraged in his work by feeling that each year brings some definite accomplishment, and he can measure his advancement by recognized standards. The fact that a certificate of graduation from this

course admits him to the high school, the Agricultural College, or the Normal School, adds a little dignity to the work that may be one incentive to perseverance. The system is perfectly feasible, is inexpensive, is practical; and if earnestly persisted in for a few years will prove its own advantages.

SALVAGE FROM FIRE.

There is but one house in the country that makes a business of rehabilitating the salvage of great fires, and, as that one house takes salvage of any and all kinds from fourteen different States, something of the scale upon which it is conducted can be imagined. As, of course, all the goods saved from the flames are badly injured by water, they must all be subjected to a drying process.

For this purpose there is upon the second floor of the main building an immense drying room, which occupies the entire floor. In one corner of the room is an engine, with a huge pipe extending the length of the room, from which short pipes open downward, above a triple row of slats about fifteen feet long, which extended across the room at right angles to the wall the entire length of the building at intervals of three feet. These slats are set in galvanized hooks, and depend from strong timbers; from them, when visited by the writer, hung festoon upon festoon of cloth of every hue and kind, some scorched at the edges, others whole and perfect, and all soaked with water.

Great skill has been required in the management of removing stock from the ruins, as lack of skill in this particular would add greatly to the losses.

The large cheap stores, as well as many wholesalers, are the purchasers of reclaimed salvage. As the goods when they come into their hands are almost as perfect as when they came from the factory, and can be sold far below factory prices, the poor are thus enabled to procure many necessities and even luxuries which would otherwise be beyond their reach. The insurance companies are benefited greatly by this skillful handling, and quick sale of the salvage not only partially reimburses their losses, but in many cases pays the entire amount of the policy and the cost of reclaiming the stock, and leaves a comfortable surplus in their hands. The insured profits equally with the company. He not only receives the full amount of his policy, but gets rid of a large amount of what to him is worthless rubbish.

There are hundreds of persons employed in caring for and reclaiming the stock, most of whom have been in the business since it was first begun; and as the greater part of the work is skilled labor, they receive salaries comparing favorably with those paid to other departments of skilled labor. There are hundreds of other workers required for the loading, unloading, transportation, and sale of goods; and thus we see that a new channel for human energy has been opened up, and a new industry established which is already making its influence felt all over the country. The magnitude of the scale upon which this business is conducted, as well as its rapid growth since it was established only a few years ago, is but another illustration of modern inventive genius and enterprise which creates wealth from apparently worthless material.—*Chicago Tribune*.

DRESSED BEEF.

While our British cousins are investing such fabulous sums in various Yankee industries, why does not some one send to the London "promoters" of such schemes a copy of Mr. Armour's recent statement before the Senate Committee, showing the profits of the dressed beef business? The "big four" have demonstrated thoroughly that "there's millions in it," even at the reasonable profit of \$1.22 per head of cattle handled, and it is only a question of time when large amounts of fresh capital will be put into the trade. The big operators at the Chicago Yards have ushered in what is certainly the process of the future, and a proper diversification of interests working along the lines they have marked out is all that is needed to restore the status quo in respect to values of live cattle. The day of the local butcher, with all his extravagant methods and inordinate comparative profits, is gone never to return; and now that this is being generally recognized, the *Gazette* does not look for any long lease of the present monopoly held by the men who have brought about the revolution. There is too much idle capital seeking safe and lucrative invest-

ment nowadays to admit of the indefinite enjoyment of exclusive control of so vast an industry by any man or set of men. Let ranchmen ship their steers into Kansas and Nebraska for "finishing," instead of flooding this market with canners' stuff, and dressed-beef "plants" rivaling any now in existence may then be operated with the highest economy and substantial profit west of the Mississippi. Texas, too, should feed more of her beeves—first breeding better ones—and kill them on the "Big Four" plan, at home. If cattlemen will but agitate for such an end, the *Gazette* believes that capital can be freely enlisted in it. The salvation of the cattle business, in our humble belief, is likely to be wrought out in this identical manner, and the day of its deliverance from bondage is probably not so far distant as some may imagine.—*Breeder's Gazette*.

HONOR THE HOME.

I might as well undertake to enumerate the stars as try to record all the advantages of improved homes and home life. They will give us the society of agreeable people, who will take pleasure in accepting our hospitality; promote cheerfulness, good temper, and all amiable qualities; suppress despondency, peevishness, faultfinding, and innumerable disagreeables. Improvement societies will promote friendly and profitable intercourse. The interest awakened among their members will soon manifest itself in conveniences introduced into kitchens; adornments in living-rooms; trees, shrubbery, flowering plants, fruit-bearing vines and bushes in gardens and grounds. These must be looked at by the members and their merits discussed; this leads to frequent friendly visits that ripen into intimacy and friendships greatly to be prized. People who can be induced to put their houses and adjacent grounds in good order will learn to appreciate neatness and arrangement; this—by force of example—will show itself on the farms, in the shops, and in all business affairs. Disorder in the house and yards perverses the taste, deadens sensibilities, leads to lax and slovenly habits.

As each citizen who improves his house and his grounds furnishes a powerful incentive to the neighbors to do the same, this co-operation builds up the town; increases value of real estate; makes a good reputation for the community; keeps the inhabitants from selling out, and children from leaving the parental roof. Home is the sacred spot of all the earth. Haven in every storm, solace in sorrow, resting-place to the weary, it fosters good; saves young and old from bad associations. Another advantage, inestimable, that follows outdoor improvements, is the benefit to health. The more useful the beautiful gardens and grounds become, the more pleasure will the family take in caring for them; the more time will men, women, and children spend in healthful exercise in the open air. This is the genuine "elixir of life," worth more than all the patented and unpatented medicines swallowed by the credulous. Strange! the people do not see that the home is a chief concern; that their worldly matters are secondary, and should help, never hinder, the making of our earthly abode the presage and foretaste of the home above.—*Hugh T. Brooks, in New York Tribune*.

COLLECTING FARM STATISTICS.

There is some feeling among farmers concerning the use which is believed to be made of the statistical information that they give to officers who are required to collect them, and several local unions and sub-alliances have adopted resolutions to the effect that they will not furnish any more such information. This, we believe, is a mistake on the farmers' part, because, if for no other reason, the grain gamblers, railroad managers, and newspaper editors collect this kind of information in advance and invariably have it on hand before official reports reach the public. The *Kansas Farmer* has frequently criticized our State authorities for not getting their crop reports out sooner. The people—all the people—in this State and in every other State are interested in this kind of information. It is important especially to farmers themselves, for without it, they lack the necessary data to calculate their own business conduct upon. Farmers in Kansas are interested in the crops of Michigan, of Ohio, of Kentucky, of Nebraska, of Missouri, of all the States and of all the nations. No man can lay out his own business plans satisfactorily who does not know anything about the business of other men who are engaged in the same line of business.—*The Kansas Farmer*.

MEANS OF ILLUSTRATION.

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Ornamental grounds, set with a variety of evergreens and deciduous trees. Sample rows, containing about 150 varieties of ornamental and useful shrubs and trees, labeled.

Vegetable garden, with hot-beds and cold-frames and experimental beds. Practice rows for students' budding, grafting, cultivating, and pruning.

Two well-planned and furnished greenhouses of three rooms each, stocked with a collection of native and exotic plants.

Museum, containing a collection of woods from American forests, and a large series of specimens in economic and general entomology.

Value of property, exclusive of orchards and grounds, \$11,500.

Chemistry and Mineralogy.—Eight rooms, fitted with tables and apparatus for a class of eighty students in qualitative analysis, sixteen in quantitative analysis, including necessary facilities for assaying, with a mineralogical collection and general illustrative apparatus. Value, exclusive of building, \$7,500.

Botany.—A general herbarium, consisting of a large collection of plants of the United States and other countries; a Kansas herbarium, containing specimens illustrating the distribution and variation of plants throughout the State; also twenty-one compound microscopes, three dissecting microscopes, tools, reagents, wall-charts, etc. Valued at \$2,500.

Geology, Zoology, and Veterinary Science.—A general museum well fitted with cases containing valuable collections of mounted Kansas mammals and birds, with mounted skeletons of wild and domestic animals. The largest collection of Kansas fishes and molluscs in the State. Kansas reptiles and batrachians, salt-water fishes and invertebrates in alcohol. Collections of Mound-builders' and Indian relics. Kansas fossils and rocks, typical of the geological ages found in the State.

In Veterinary Science: A laboratory fitted with apparatus and reagents, for the study of disease. A collection of charts, models, and anatomical preparations, illustrating healthy and diseased structure. Value, \$4,500.

Drawing.—Models, plaster-casts, patterns, charts, easels, and implements. Valued at \$1,400.

Physics.—Physical apparatus, meteorological instruments, etc. Edelman's dynamo electric machine, with numerous accessories, sling psychrometer, and anemometer. The value of the whole is \$2,000.

Mathematics and Surveying.—Transits, compasses, levels, chains, models, etc. Valued at \$1,000.

Mechanics and Engineering.—Carpenter shop, with separate benches and tools for forty-five students in each class, besides lathes, mortising machine, circular saws, band saws, planer, friezer, boring machine, grinder, and general chest of tools for fine work. Power furnished by a ten-horse-power Atlas engine.

Shops for iron work, with forges, vises, drills, etc. Testing machine, charts, and models.

Inventory of material and apparatus in both shops, \$5,500.

Kitchen Laboratory, with ranges, cooking utensils, dining-room furnishings, dairy furniture; valued at \$500.

Printing.—Office, with thirty pairs of cases, large fonts of six point, eight-point, ten-point, and eleven-point Roman type; a good assortment of job type and brass rule; a Babcock cylinder press with steam power, a Gordon job press; a mitering machine, a rule curving machine, and a paper cutter. Value of equipment, \$3,500.

Telegraphy.—Office, with five miles of line, connecting twenty branch offices, and as many instruments. Inventory, \$1,000.

Sewing Rooms, with six machines, models, patterns, and cases; worth \$550.

Music Rooms, with four pianos, four organs, and other instruments; valued at \$1,500.

A Library, carefully selected and catalogued, containing over 9,000 bound volumes, and 2,500 pamphlets. A reading-room is maintained in connection with the library, where may be found on file forty-five of the leading literary, scientific, technical, and agricultural periodicals, and several hundred newspapers, including the principal daily and county papers from all parts of the State. Value of library, \$15,000.

Armory, containing one hundred and fifty stands of arms (breech-loading cadet rifles, caliber .45), with accoutrements; two three-inch rifled guns; also swords, uniforms, etc. Value, exclusive of arms, \$800.

INDUSTRIAL TRAINING.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have Farming, Gardening, and Fruit-growing, Carpentry, Cabinet-making, Iron-work, Printing, or Telegraphy. Young women may take Sewing, Printing, Telegraphy, Floriculture, or Music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second year and the fall term of the third year, upon the farm, gardens, and orchards. Young women take their industrials for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

The Michigan Agricultural College lost by fire this week its Botanical Laboratory and Museum building, saving the furniture, apparatus, herbarium, and part of the material of the museum. All will sympathize with Dr. Beal and the College. As usual in State institutions, there was no insurance.

CALENDAR.

1889-90.
Fall Term—September 12th to December 20th.
Winter Term—January 7th to March 28th.
Spring Term—March 31st to June 11th.
June 11th, Commencement.
1890-91.
Fall Term—September 11th to December 19th.

TO SCHOOL OFFICERS.

The College Loan Commissioner has funds to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioners and the State Agricultural College. Address Jno. E. Hessian, Loan Commissioner, Manhattan, Kan.

LOCAL MATTERS.

The Scientific Club met last evening in regular session.

Mrs. Cottrell is visiting relatives in Wabaunsee this week.

Mrs. Failyer has been visiting with Mrs. Fry in Randolph for a few days this week.

Prof. Kellerman's youngest child has been quite sick, but is slowly gaining in health.

Rev. G. H. Perry called on Thursday with friends from Capioma, Nemaha County.

Assistant Mason has an interesting article on tree-planting in this week's *Nationalist*.

Mrs. Fayles, of Ottawa, was a visitor yesterday to her old-time friend, Mrs. Kedzie.

The Misses Secrest were called home to Randolph this week to the funeral of their grandmother.

Prof. Failyer's house will soon be lighted by gas, a machine for its manufacture being now in position.

The Printing Department is engaged on President Fairchild's synopsis of political economy, a twelve-page pamphlet.

Prof. Brown takes an active part in the rehearsals for the presentation of "Jephtha and His Daughter," by home talent, on April 3rd and 4th.

Mrs. Kellerman's paper on hypnotism, read at the last meeting of the Domestic Science Club, is published in full in this week's *Nationalist*.

Ex-Regent D. C. McKay, who was connected with the Board of Regents from 1876 to 1883, died at his home in Ames, Cloud County, recently.

Regent Wheeler's name appears as President of the Atchison County Sunday School Association upon the neat programme of the meeting this week at Atchison.

Dr. A. F. Waugh, of McPherson, called on his way to the meeting of Alliance Presidents at Topeka to visit his son and daughter, members of the Third-year Class.

Owing to bad weather, the Exhibition of the Webster Society, due for last Thursday night, had to be postponed. The date now fixed for the entertainment is Tuesday evening, April 1st.

Miss Emma Hussey, of Lynn, Mass., who has been visiting for two months with Prof. and Mrs. Hood, left this week for Yankton, Dakota, where she will spend six weeks before returning home.

Prof. Olin has rented Mrs. Gale's place, and will take possession April 1st. The Professor will doubtless show himself a proficient horticulturist before the season is over, if he cares for the place as he intends.

The College has received by the hand of W. H. Olin, '89, a gift for the Library from Capt. W. E. Mitchell, of Wabaunsee. The book is entitled "The Complete Grazier, or the Farmer and Cattle-dealer's Assistant," and was printed in London in 1805.

The McPherson Democrat has this to say of a present Regent of this institution: "Morgan Caraway, Postmaster at Great Bend, has purchased the Register of that city from Chapman, now Receiver of the Larned Land Office. Caraway will make a good newspaper man."

Rev. E. Gale, formerly Professor of Horticulture here, and later President of the State Horticulture Society, is home for a brief visit. Mr. and Mrs. Gale will spend the summer among relatives east,

and go together to the new home which he has made at Lake Worth, Florida.

The opening of the Spring Term on Monday will show a shorter roll by several names, many students being compelled to leave College to attend to business; but a goodly number of new faces, as well as some familiar ones of past years, will be seen among the seekers after knowledge.

The Faculty have decided to recommend to the Board of Regents that hereafter the diploma from county courses of study in counties where the course is approved by the Faculty, be accepted in lieu of examination for admission to College; also that certificates from approved graded schools that students have completed the studies of the grammar grade be accepted. This provision is designed to bring the College into closer relation with the best of district as well as the city schools. Lists of approved courses and schools will be published in the INDUSTRIALIST as soon as the plan is fully adopted. This notice anticipates the adoption to prevent misunderstanding from mistaken publication elsewhere.

A fitting finale of the successful Winter Term were the orations yesterday afternoon by the third division of the Senior Class, nine in number, who interested their fellow students and the many visitors in a comprehensive treatment of the following topics: T. E. Wimer, "Evolution and Religion;" H. N. Whitford, "The Times and Work of Columbus;" W. H. Sanders, "Dickens as a Writer and as a Man;" Emma Secrest, "Thoughts on the Celebration of the Birthday of a Dreamer;" G. E. Stoker, "Liberty for the Americans;" R. Snyder, "The Farmers' Movement;" Marie Senn, "What is Christian Socialism?" W. T. Swingle, "Naturalness;" G. J. VanZile, "A Nation's Sequel."

GRADUATES AND FORMER STUDENTS.

A. L. Helmick, Third-year in 1882-3, is teaching at Rosedale, Kan.

Hattie E. Gale, '89, is teaching at Lake Worth, Fla., while keeping house for her father.

M. H. Markham, Second-year in 1880-81, took an active part in the meeting of Alliance Presidents at Topeka.

D. E. Bundy, '89, has spent a few days at College this week in preparation for his work at Ponca Agency, Indian Territory.

W. H. Olin, '89, after a successful year of teaching at Wabaunsee, is pursuing special studies in agriculture at this College.

G. A. Cooper, First-year in 1885, announces himself as a married man and a successful ranchman at Greenhorn, Colo.

S. F. Williston, '72, as Corresponding Secretary of the Yale Medical Society, sends a copy of that Society's address to Yale Medical Alumni.

Stuart J. Hogg, a former student, will, it is said, leave in a few weeks for London, where he will visit for a month or more with relatives.

P. M. Kokanour, Third-year in 1885, is making a bright local page on the Manhattan Republic pending his departure for Louisiana in about six weeks.

The Manhattan Republic says that O. G. Palmer, '87, of Jewell County, has been appointed to a clerkship in the Census Bureau at Washington, at a salary of \$1,200 a year.

Geo. F. Thompson, as one of the proprietors of the *Nationalist*, and E. C. Parker, a student in 1888-89, have brought suit against the editor of the Junction City Republican, for defamation of character.

J. E. Thackrey, Third-year in 1888-9, having finished a term of teaching, joins his brother this week in work at the Government Schools connected with the Sac and Fox Indian Agency. They will be stationed about thirty miles apart, and have charge of farm and garden instruction.

THOROUGHBRED STOCK FOR SALE.

Owing to overstocking, the Farm Department of the College offers several head of thoroughbred Shorthorns and Jerseys for sale. They are all breeding animals in excellent condition. The Shorthorns are of the well-known Cruikshank family, and among them are three yearling bulls. All the Jerseys are registered in the Jersey Herd Book. For further information apply to the Professor of Agriculture.

COLLEGE SOCIETIES.

Scientific Club.—President, O. P. Hood; Vice-President, J. T. Willard; Secretary, A. A. Mills; Treasurer, Abbie Marlatt; Board of Directors—J. D. Walters, J. F. Morrison, and O. E. Olin. Meets in Chemical Laboratory on the fourth Friday evening of each month.

Webster Society.—President, G. E. Stoker; Vice-President, S. C. Harner; Recording Secretary, H. W. Avery; Corresponding Secretary, C. A. Campbell; Treasurer, J. W. Ijams; Critic, W. T. Swingle; Marshal, B. H. Pugh, Board of Directors—G. E. Stoker, J. A. Davis, C. A. Campbell, W. S. Arbuthnot, E. R. Burtis. Meets Saturday evening at half-past seven o'clock.

Alpha Beta Society.—President, Marie B. Senn; Vice-President, W. W. Hutto; Recording Secretary, Delpha Hoop; Corresponding Secretary, Sadie Moore; Treasurer, J. N. Harner; Marshal, P. E. Westgate; Director, V. O. Armour; Critic, May Harman. Meets Friday afternoon at three o'clock.

Hamilton Society.—President, S. VanBlarcom; Vice-President, A. K. Midgley; Recording Secretary, A. E. Martin; Corresponding Secretary, F. A. Waugh; Treasurer, G. W. Wildin; Critic, F. A. Campbell; Marshal, R. W. Newman. Board of Directors—A. F. Cranston, F. A. Waugh, F. A. Campbell, U. G. Balderson, C. P. Hartley. Meets Saturday evening at half-past seven o'clock.

Ionian Society.—President, Julia Pearce; Vice-President, Doris Kinney; Recording Secretary, Lottie Short; Corresponding Secretary, Maude Whitney; Treasurer, Myrtle Harrington; Marshal, Kate Pierce; Critic, Fanny Waugh. Board of Directors—Effie Gilstrap, Phoebe Turner, and Alice Vail. Meets Friday afternoon at 3 o'clock.

Young Men's Christian Association.—President, W. H. Sanders; Vice-President, V. O. Armour; Recording Secretary, H. B. Gilstrap; Corresponding Secretary, R. W. Newman; Treasurer, H. Darnell. Meets in Horticultural Hall Sunday afternoon at three o'clock.

Young Women's Christian Association.—President, Christine Corlett; Vice-President, Orcia R. Wells; Recording Secretary, Callie Conwell; Corresponding Secretary, Ava Hamill; Treasurer, Sarah Correll. Meets Tuesday morning at eight o'clock in Society Hall.

SOCIETY HALL, March 22nd. "Is Commerce more beneficial to the interests of the Nation than Agriculture?" was the question for debate in the Webster's. Peter Keele thought it was. Commerce is necessary, therefore it is beneficial. It only remains to prove to what degree it is beneficial. The colonies of America gained their wealth principally by commerce to the exclusion of agriculture. Without commerce, the United States debt could never have been so diminished as it is at present. Not only in time of peace is commerce beneficial; when two nations are at war with each other, there are usually some countries which furnish both hostile nations with provisions, thus resulting in great pecuniary wealth. J. A. Davis argued the negative. From the fact that the United States spends more upon agriculture, we see that it is more beneficial than any other industry. If we had no agriculture what would our commerce amount to? The fact is that agriculture is the basis of all industrial progress in our country. Upon it rests our wealth, our stability of government, our prosperity, our all. Take it away from one nation and you have nothing left. Mr. W. W. Fields has said, "The importance of agriculture cannot be overestimated; whatever else is done, humanity must eat. Farmers' work cannot be suspended for a single year without the most serious results to society. Suppose that any one of the valuable and legitimate branches of trade, commerce, manufactures, or the learned professions (so-called) were suspended for the same length of time, would the same marked effects be visible? Certainly not."

The affirmative was continued by A. A. Gist. Commerce is the exchange of one kind of produce for another. Agriculture is the art of tilling the soil. Commerce is the bond which binds the American people to the rest of the world. Agriculture has no such office. Take from your table that which you have through the means of commerce, and you take away some of the most valuable and necessary articles by which we live. Statistics show that where commerce has not existed, neither have the sciences and the useful arts. Look back at Greece, and you will notice that her principal cities were those which were rewarded for their commerce. Phoenicia was one of the most prosperous nations which ever existed, and her stronghold was Commerce. Agriculture was one of the minor arts.

Mr. McLeavy continued the negative. Agriculture supports the laborer, the railroad kings, and the nation. Without it, we are nothing. Some one has said that, "Agriculture is the great moving power, the master wheel, which must start the numerous activities of man and keep them moving by supplying the workers with bread and meat." After brief reviews by the leaders, the Judges, Messrs. Martin, Otis, and McDowell, decided in favor of the negative.

E. M. Curtis read an essay on the Mississippi River. "Over a mile straight across the river from me was the opposite shore, with its beautiful colored woods, broken now and then by some small tributary flowing down to be swallowed up by the mighty rolling stream. Looking up the river, nothing can be seen but bluffs and hills on one side, the dark green woods on the other, and between them nothing but water, water, water." Declamation, N. B. Walter. H. V. Rudy read an essay on "Ten years from now." The Union will boast of a population of over eighty million people. The race problem will be settled. Railroads will carry passengers for two cents per mile, and postage will be one cent instead of two. Women will have their just rights; the power of the saloon will be broken and "resubmission" will be a thing of the past. American ships will carry American mails and American produce to all the people of the globe. Arbitration will have been established to settle disputes between nations. Africa, the "dark continent" and land of the savage, will have been opened and settlements made. Go back ten years, and note what has been gained, and remember that more men are studying the condition of affairs with the hope of bettering mankind than ever before, that progress is the watchword, and that earnestness of purpose actuates the leading thinkers. Discussions by Geo. K. Helder, "The International Maine Conference," and A. Dickens on "Stay laws," as applied to mortgages. The Webster Reporter, edited and read by F. C. Curtis, closed the literary programme.

HAMILTON HALL, March 22nd. The Hamilton Society was called to order by Vice-president Midgley at 7:30, and roll call showed that a great majority of the members were present, after which Mr. Rice led in devotion. Reading and adoption of the minutes of the previous meeting. To open the programme, Mr. Staver read an essay, "Theater Going," in which he spoke of the opera houses of large and small cities, and thinks theatre playing is an honorable occupation. Mr. Midgley delivered a declamation entitled "Robert Emmet." Mr. Peterson followed with a declamation on "Patriotism as broad as humanity." Debate, question, "Resolved, That the United States should set apart Oklahoma for the negroes." G. VanZile opened the affirmative. "It will settle the vexed race problem. The negroes are capable of governing themselves. The men who are fighting this enterprise are sharks, land-grabbers, who want to become rich without labor. Climate is well adapted to the negro's development. It is impossible to colonize all here; but as an experiment, if it fails, no one is to blame but the negro." The negative was opened by A. F. Cranston. "The experiment impossible. Impracticable to have a negro colony in the heart of the United States. They are by nature better suited to the tropics. If they were allowed the privilege of settling here it would be more difficult to colonize them without the borders in the future." Mr. Hobbin followed on the affirmative side. "We never have given the negro a chance, and it should be done now while he is willing to take it." Mr. Hermel farther argued the negative. "The scheme should have been agitated before so many white settlers were allowed to seek for homes in this fertile spot." In closing, the chief disputants answered each other's points very well, and the Judges, Messrs. Campbell, Parker, and Balderson, decided in favor of the negative. After recess, Mr. Abbot, as music committee, assisted by Mr. Smith, rendered a very appropriate and fascinating instrumental selection. The Hamilton Recorder was presented by G. V. Johnson. The principal pieces were, "Metamorphosis," "What shall we do with ourselves," "The Ag. Supper," "The First Dance." J. W. Mills gave his views upon the negro question. G. L. Melton considered the late war excitement between the United States and England, in regard to the seal fishing, and contrasting the large navy of England and the small one of the United States. The music committee rendered another selection. The name of T. H. Smith was proposed for membership.

SOCIETY HALL, March 21st. At three o'clock the Alpha Beta hall was filled to overflowing. With a view to representing the standard work of the Society, a change of programme had been arranged for. The exercises opened with music, "The Mermaid's Song," by Misses Parker, Hoop, and Hopkins. The question, "Resolved, That the social influence of women is greater than the political influence of men," was discussed on the affirmative by Emma Secrest. She states that in treating the subject it is to be understood that by the political power of men is meant they gain through the suffrage right, and that by social power of woman is not meant merely the influence exerted in the fashionable drawing room, but that larger sense of the words as applied to all human intercourse. Before a young man is influenced by political affairs his opinions are already formed and ideas of right and wrong firmly imprinted on his

S. I. B.

mind by the women in whose society he has mingled. Bertha Kimball argued the negative. The only way in which we can measure these two great influences is by comparison. There are names of men in centuries past that will be remembered as long as time shall last, because they have figured in a political struggle of a nation. Countless numbers of noble-hearted women in that day lived, died, and were forgotten, and if they had a social influence it was not of enough consequence to be remembered. Woman's influence must indeed have been a grand one if it has taken her over 2,000 years to find her place and gain the recognition of the world. Women do not directly control the destiny of a nation, and as long as men are the law-makers so long will the political influence of the man be responsible for the rule or ruin of his country. The society weekly paper was presented by Nellie McDonald. The principal articles were "Should the waterways of the country be developed by the Government?" "A Lament," "A review of the new pamphlet, 'Gottlieb,'" "The Mistletoe," and a poem. A male quartette, by Messrs. Westgate, Smith, Clothier, and Hutto, was the next on programme. This was followed by the "Songs of Seven." Seven times one—"Childhood"—was represented by Martha Campbell. Seven times two—"Romance"—by Nellie McDonald. Seven times three—"Love"—by Ella Barnes. Seven times four—"Maternity"—by Julia Greene. Seven times five—"Widowhood"—by Jennie Greene. Seven times six—"Giving in Marriage"—by Bertha Kimball. Delpha Hoop acted as the bride given and E. C. Thayer the recipient. Mary Harman was representative of Seven times Seven—"Longing for Home." The A. B. quartette assisted by furnishing march music. The next exercise was a comic dialogue—"Frog Hollow Lyceum." President J. E. Taylor, Secretary, R. Walker, Mr. Conner, alias Peter Swipes and Jessie Stearns, alias Tolly Snippers, contested over the question, "Woman should be allowed to vote." Mr. Donahue took the part of Felix Riddle; Elizabeth Edwards, that of Jane Jones. J. N. Harmer acted as Mr. Slabside, and Janetta Zimmerman as Betsy Scruggins. A duet, "Speed My Bark," by Julia Greene and W. W. Hutto, closed the programme. C. L. H.

LABOR AND EARNINGS.

Every encouragement is given to habits of daily manual labor during the College course. Only one hour of daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their abilities and means.

All labor at the College is under the direction of the Superintendents of the departments, and offers opportunity for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed.

The shops and offices are opened afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed—outside of required hours of labor—upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates varying with services rendered, from eight to ten cents an hour. The Superintendents strive to adjust their work to the necessities of students, and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay-roll for the past year ranges from \$250 to \$400.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term time, or from other sources, for the larger part of their expenses. The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

EXPENSES.

Tuition is free, and no general fee for incidental or contingent expenses is charged. In a few special departments of instruction, the following payments are made in advance to the Secretary:

In the term of Analytical Chemistry, students pay \$3 for the chemicals and apparatus used in their laboratory practice and analysis.

In the Printing Office, young men, in their first year, pay \$3 a term for office expenses. Advanced students have the use of the office for the work performed during the industrial hours.

In Telegraphy, young men pay \$3 a term for office expenses.

Young women are furnished both Printing and Telegraphy free of expense, these two offices, with the Sewing and Cooking Departments, being provided especially for their industrial training.

Lessons in instrumental music—two a week—are from \$10 to \$15 a term, according to its length; one a week, \$6 to \$8.40. One-half is to be paid to the instructor in charge with the first lesson, the other half at the middle of the term.

The cost of text-books at the book stores is, for the first year, about \$4 a term; for the second year, \$2.75 a term; for the third year, \$7 a term; and for the fourth year, \$5.50 a term.

The expenses for apparatus and tools to each student during the course are as follows: Drawing, \$3.50; microscope for Botany and Entomology, \$1.50; case, pins, etc., for Entomology, \$2.25; rules, in carpentry 25 cents, printing 25 cents. The total expense for these articles during the four years is less than ten dollars.

Board and washing are not furnished by the College. Board, with furnished rooms, can be procured in private families at from \$2.75 to \$4 per week. Some students board themselves at even less cost; and rooms for the purpose can be obtained at a rent of from \$1 to \$3.50 a month. Washing costs from 50c. to \$1 a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$120 to \$200 a year.

COLLEGE BUSINESS.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. Applications for extension of time on land contracts should be sent to the Secretary of the Board of Regents, at Manhattan.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Kellerman, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study or work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

Applications for Farmers' Institutes should be addressed, as early in the season as possible, to the President.

The Experiment Station should be addressed through the Director.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

The Ellis and Russell County teachers will hold a joint meeting at Russell, April 19th, the last one of the season.

Fist arguments were freely used to support or make "impressive" the speeches at a literary meeting on Deep Creek, Riley County, one evening of last week.

The friends of the defeated participants of the State oratorical contest should learn to take a defeat. The judges were able, and the contest fair. The way to take revenge is to try again next year.

The High School of Dickinson County, located at Chapman, has just completed its winter term with an attendance of about 100 pupils. The school is in a very prosperous condition, and deserves to be imitated by every county in the State.

Prof. Snow returned Wednesday from the western part of the State, where he had gone in search of meteorites. He succeeded in getting one weighing over a hundred pounds. It is composed almost purely of malleable iron and nickel.—*University Kansan*.

The *Topeka Mail* learns from J. E. Guild that he had left over 35,000 bushels of corn from his crop of '88, and is full feeding 200 cattle, one hundred head being spayed heifers. He is feeding eighty bushels of meal daily, doing the grinding himself, the power being furnished by a steam engine.

The State University is the pride of every loyal Kansan. It is a living monument to the wisdom of the State's pioneers, and is making a glorious record. Baker is the State's first and best denominational institution, broad and liberal in policy, ambitious and effective in performance.—*Baker Index*.

Eureka Academy advertises very favorable chances for spring work, especially for teachers who have finished their winter term of teaching and desire to attend some good school to continue the studies of methods, constitution, physiology, physical geography, etc. The term begins April 2nd, and closes June 12th.

April 14th has been designated as Kansas Arbor Day. It is very desirable that every teacher should make arrangements to have a few trees and shrubs planted in the school yard, the act of planting to be followed by brief literary exercises by the school. The good book says: "The tree of the field is man's life."

Labor Commissioner Merriweather is doing a good thing by exposing the so-called "telegraphy schools." The advertisements of these concerns are so worded as to convey the idea that the Western Union Telegraph Company is back of them. We trust the Commissioner will succeed in educating the heads of these "snide" schools.

The Summer Institute of Elocution and Oratory at Baker University of this year will open on Monday, June 9th, and close July 5th. Dr. Hoss, who conducts these summer schools, may be called the veteran teacher of elocution in Kansas. His methods are pronounced to be unusually clear and effective by all who have studied oratory under his guidance.

School officers should see that regular time is observed in their respective schools, and should by resolution adopt either railroad or sun time. This matter should not be left to the convenience of the teacher. Among teachers, there is no system observed—one month railroad time, next month, sun time. No school board should tolerate such methods.—*Russell School Record*.

Out of seventy-six teachers employed this year in Russell County twenty-six receive each \$30 per month; seventeen, each \$35 per month; ten receive \$40 per month; six receive \$20 per month. One school was taught for \$20 per month; three schools were taught for \$25 per month; six schools were taught for these respectively per month; viz., \$28; \$37.50; \$43; \$82.50; \$100.—*Russell School Signal*.

The farmers are on the alert this spring. The low price of grain does not appear to discourage them. One blacksmith says he has already made more plow shares this spring than he usually makes in the entire season. Kansas farmers have the pluck, and they will make it win. Corn is cheap, but many are holding the last crop for bet-

ter prices, or until they can raise hogs to eat it.—*Mulvane Record*.

Prof. W. A. Quayle, of Baker University, preached last Monday in the Grand Avenue M. E. Church at Kansas City. The *Times* says of him and his sermon: "Rev. Mr. Quayle is quite a man, scarcely 28, and his powers and eloquence as a preacher were a surprise to the very large congregations which attended the two sermons. He spoke extemporaneously throughout, never referring to a note, and it was a compliment to his ability and brilliance that he held his hearers closely from beginning to end." We frequently meet with such testimony of Prof. Quayle's talents and work.

Kansas schools, more than those of any other State, should make Arbor Day a red letter day. If teachers can do no more, decorate the black board with several of the following mottoes: "What a noble gift to man are the forests," by Susan Fenimore Cooper. "Thank Heaven for the trees," by Madame Michelet. "A glorious tree is the old gray oak," by George Hill. "Tis beautiful to see a forest stand," by Barson J. Lossing. "The groves were God's first temples," by William Cullen Bryant. "In June 'tis good to lie beneath a tree," by Lowell. "My garden is a forest ledge," by William Cowper. "These trees shall be my books," by Shakespeare.

CARE OF THE EYES.

1. If the eyes are tired and hot, it is a sign that they have been used too long. Stop until they are rested.

2. Do not try to read when there is not light enough. If the light is dim, the book will be held too near the eyes. This tires them and causes too short sight. Reading by a fading twilight is particularly bad.

3. The light should not be too glaring. If it is, the nerve is stimulated too much. This tires it. Besides, when any nerve is over-stimulated, it loses its sensitiveness after a time; and then the book will be held too near, and short-sightedness may result. For the same reason, the light should, if possible, fall over the left shoulder on the page. Then it will not be reflected into the eyes, as when it comes from the front.

4. The light should be steady. A flickering light keeps the eye annoyed, and it tires it with constant changes.

5. The book and the eye should be steady. It is as wearisome to the eye to have the page or the head in constant motion as to have the light flicker. Reading in the cars is trying to the eyes.

6. The upright position is the natural and easy one for the eyes. To read when lying down or with the head hanging over the book tries the eyes and tends to short-sightedness.

7. Any serious trouble with the eyes should be attended to at once. It is better never to open a book than to lose the use of the eyes. If study cannot be continued without ruining the eyes, abandon study.—*Exchange*.

MANHATTAN ADVERTISEMENTS.

R. ALLINGHAM, dealer in Fresh and Salt Meats. Special attention to student trade. Goods delivered free.

W. P. HOLMAN,—Drugs and Toilet articles, Fancy Groceries, W. Fruits, Confectionery, Nuts, Cigars and Tobacco.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

MICROSCOPES.—Swingle and Varney's Bookstore is the place to get your Microscopes, Dissecting Glasses, Text-books, and Student's Supplies of all kinds.

PICKETT'S NEW LIVERY STABLE.—Everything new and strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

BATH ROOMS.—At Manhattan Shaving Parlor, South Second Street. Hot and cold baths always ready. Everything first-class. Special care taken with ladies' and children's hair cutting. Razors bought and sold. Give me a call. PETE HOSTRUP, Proprietor.

ELSIE H. SMITH, Boots and Shoes, 302 Poyntz Avenue, first door west of Stingley & Huntress. A full line of Rubber foot wear of the best quality at the lowest prices. Mens' all Solid Leather Dress Shoes, \$1.65. Ladies' Fine Dongola Button Shoes, \$2.00. Reliable goods at low prices.

MANHATTAN BANK.—E. B. Purcell, banker. J. W. Webb, Cashier. A general banking business transacted. Bills of Exchange issued on all principal cities and towns of Europe. All bills have personal, faithful, and prompt attention of our attorneys. Proceeds remitted promptly, at current rates of exchange, without any charge of commission.

E. B. PURCELL, Corner of Poyntz Avenue and Second Street, has the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered in all parts of the city and at the College, free of charge.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds. Watches, Clocks, a magnificent line of Jewelry of the best makes. A big variety of Notions that students need. Musical Instruments, Strings, Sheet Music, Instruction Books. Our collection of Spectacles in gold, silver, and steel cannot be beat. Don't forget our ten-cent bargain counter. Everything at lowest living prices.—"75."

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GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week-day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

MORE ABOUT THE BEAN WEEVIL.

BY PROF. E. A. POPENOE.

IT is sometimes stated that the bean weevil rarely attacks the germ, and that for this reason the probability of germination is not much less for infested seed, the only danger being that as the plantlet's food in such seeds is partially eaten out the growth of the seedling will be feeble. With the view of testing the truth of this belief, a large number of infested beans of different varieties were carefully examined, and the proportion of cases noted where the vital part of the seed had suffered material injury. This examination showed many cases where the plumule was entirely cut through, at different points, and again others where the radicle was partially or totally eaten up, and the cotyledons eaten from their attachments. In the greater number of such cases, the injury was sufficient to preclude healthy germination. On the average, in the different sorts examined, the germinating power was thus destroyed in forty-seven per cent of the beans attacked by the weevil. These facts, of course, demand a different estimate of the value of weeviled beans for seed, even after the insects have been killed by some of the suggested methods. It seems to us that in seasons when the weevil is abundant it is better not to rely upon home-grown seed, but to purchase a fresh supply from a locality where this pest is not present. We have rarely found weeviled seed among the lots we have bought of reliable seedsmen in the east and north.

Our studies of infested sorts to discover the reasons for the insect's preference, if any, for particular characters, resulted rather in showing the absence of any relation between the color, texture, or surface of the pod, or height of the plant, and the degree of infestation of the bean.

Our trials of methods of destruction of this insect have been limited to modes of killing them in the stored beans. We have tried several modes, but for our purpose find most convenient and effectual the use of carbon bisulphide, a volatile liquid with a pungent odor, readily evaporating into a poisonous gas, which is, by the way, highly explosive when ignited. This gas, or vapor, quickly suffocates the weevils and their larvæ and pupæ when a portion of the liquid is poured into the vessel containing the beans. In order to prevent the too rapid escape of the gas, and to make sure of securing its full effect, the infested beans should be placed for treatment in a vessel that may be tightly closed.

The use of this liquid is not dangerous when due care is taken to prevent the access of the gas to a light or fire, nor does it in any way injure the beans for seed, if necessary to make such use of them. As the insect winters in the infested seed, it is important to prevent the escape of the beetles either in spring, or, if the beans are stored in a warm place, in the winter, in order that the number of parent weevils may be diminished. The better plan is to take means for killing the insects when the beans are first stored. If this precaution were taken by all growers in a neighborhood, the injury from this pest would be much less considerable.

THE NEWSPAPERS' FIGHT FOR MORALITY.

BY SUPT. J. S. C. THOMPSON.

ALTHOUGH the "Power of the Press" may be a well-worn theme, on which essays good, bad, and indifferent have been written by thousands, it seems pertinent just now to call attention to the promptness with which the newspapers of the country took up the fight against the Louisiana lottery, and the vigorous style in which the battle was carried on, the enemy being routed "horse, foot, and dragoons." Of all recent questions involving

the welfare and honor of the country, the attempt by this lottery company to fasten a huge barnacle on a maiden State has attracted most attention,—the result of the editorial broad-sides, the ultimate effect of which will be to wipe the corporation out of existence, since the people of its State are too thoroughly aroused to permit a renewal of the charter under which the concern has operated for many years.

The friends of morality owe this victory to the press, as they do nearly all others of popular reforms which had for their object the betterment of the condition of the people. It is the press which sounds the first note of warning and alarm, and afterwards maintains the lead in the cause. It is at the head of all great movements, and, of course, is always on the side of right and justice. We have grown to expect great accomplishments of our newspapers; and our confidence is not misplaced.

FOOD ADULTERATION.

BY SUPT. J. S. C. THOMPSON.

UNPLEASANTLY startling is the statement from the Department of Agriculture at Washington, based upon investigations conducted by experts, that fully fifteen per cent of the food supply of the United States is adulterated; or, to put it in a manner more easily comprehended because of the immense sum involved, that we pay our grocers, butchers, and bakers nearly \$700,000,000 a year for things we do not get.

Analysis shows that there is prodigious fraud practiced under our very eyes in the adulteration of all, or nearly all, the staple articles of consumption. The report tells us, for example, that out of fifty samples of molasses, thirty-three were found to be adulterated, one element of adulteration being salts of tin, which, as everybody knows, is an active corrosive poison. Five of the seven samples of honey were grossly adulterated. Not one of all the samples of baking powder that could be obtained was pure, all containing alum in injurious quantities. Sixty-four of eighty samples of cream of tartar showed adulteration ranging from ten to eighty-two per cent., the substituted substances being flour, terra alba, etc. But few of the many samples of black pepper, mustard, cloves, cinnamon, and spices of various kinds were found to be genuine. Of the samples of vinegar, fully seventy-five per cent were adulterated. Quinine seems to be a favorite article for fraudulent treatment, as but two of fourteen samples were found to be pure, while of more than three hundred drugs in everyday use as medicines, only one-third were found free from foreign articles. Coffee seems to be the most grossly abused of the articles of common food, in many of the samples it having been discovered that the most essential oils had been extracted from the beans, which are then sold as good coffee, while the essences are manufactured into extracts and sold as such. It is a common practice, also, to soak the beans in salt water when they are shriveled, this treatment restoring their plumpness, after which they are polished by compounds containing lead, Prussian blue, and other rank poisons, which are regularly sold in large quantities to coffee dealers. None of the maple sugar samples were pure, not one being found to have less than twenty-five per cent of adulteration, while some contained as high as seventy-five per cent of substances not "pure maple." Even bologna sausage, while free from "dog," proves to be, in some localities, composed of stale and partially decomposed meat, which is so highly seasoned with salt, saltpetre, borax, alum, and Venetian red that the smell and taste of the meat is

hidden. The list might be extended to include many other articles in the manufacture and preparation of which fraud is practiced, the analysis of which disclosed substances of a disgusting and poisonous character.

Well may we ask, What do we eat? but we shall have to

"Read the answer in the stars,
For we mortals know it not."

And, moreover, we evidently do not care to know, for no effort has ever been made to punish the violators of the adulteration laws, and they have plied their calling in States which have severe penal laws as well as in States where there are no legal restrictions. But this is "everybody's business," and while we may possibly like to learn how we are being imposed upon, we shall continue to eat bogus food as of old.

HOG CHOLERA.

The following clipping gives Dr. Salmon's latest conclusions as to hog cholera:—

"In conclusion, I would summarize the results of the Department's investigations as follows:—

"Improved methods of breeding and feeding may somewhat increase the vigor of American hogs, and in that way slightly, but not greatly, reduce the ravages of epizootic diseases.

"Individual farmers may use measures of isolation and disinfection which would greatly reduce these losses.

"Sanitary measures, properly enforced by the National or State Governments, would be still more effectual and reduce the losses to a minimum.

"No method of vaccination or inoculation has yet been discovered which gives satisfactory results. Inoculation is a crude and unscientific method, uncertain in its effects upon animals, liable to spread contagion, and ineffectual as a preventive. Vaccination is still to be tried, and in advance of trial it is best not to form an opinion.

"There is not much hope of discovering any drug or combination of drugs which will have any very decided effect in preventing or curing this class of diseases. Many hundreds of supposed "sure cures" have been sent to the Department to be tested, but hogs treated with them have generally died as soon, and often sooner, than those which received no medicine at all."

THE PREVAILING DEPRESSION.

The prevailing depression in American agriculture is treated by the statistician, J. R. Dodge, in the March report of the Department of Agriculture. The prevalence of low prices is noted, and a feeling of discouragement of the rural circles throughout the world is indicated. It is, and has been, especially severe in Great Britain, and is the subject of official discussion and investigation in Germany, France, Italy, and other countries. It is present in monarchy and republic, under diverse circumstances and economic systems. But it is less severe here than in other countries. Though prices of implements, utensils, and fabrics are so low, the farmers' interest account is unreduced, and his mortgage harder to lift. The main cause of low prices is referred to the inexorable law of supply and demand. Corn, wheat, and other staple articles are cheap because of over production. Immigration has increased the population five million in ten years. Inter-continental areas have been converted into farms, free to natives and foreigners, opening millions of acres to cultivation. Railroad extension has stimulated production and overwhelmed the East with western productions.

WHAT RE COURSE HAVE WE?

It requires but a novice in the world of observation to be able to see that American farmers are ruining themselves by their own want of judgment, their unthinking and absurd habit of practicing the one crop system and the consequent over production which results therefrom.

But then the question arises, What recourse have we? What can we resort to if we make a change, and how adapt ourselves to the work and altered circumstances? We can most certainly resort to a rotation of crops in place of forcing corn after corn and wheat after wheat. We can reduce the

average of plowed crops generally, and raise more good stock, more good horses, beef steers, milch cows, early maturing hogs, good mutton, fine, plump poultry, and eggs, and produce more first-class butter and cheese. We can determine to raise only such crops as can be consumed by our stock and make it carry them to market in a manufactured form. We exhibit no judgment in attempting to raise so much corn and wheat as to bring ourselves in competition with cheap Russian, Indian, and South American grain. We raise a hundred millions of bushels of wheat too much, and send it to Europe because we cannot use it, and that which we send there determines the value of all that is left behind. Could anything be more absurd? We devote millions of acres too many to corn, and in consequence discount a market we ought at all times to be improving, thus destroying all values for pork and lard, beef and mutton, and further depressing the value of wheat and oats. Indeed, we work without a plan, without foresight or hindsight, without judgment or intelligence, and clamor all the time because prices are so low that we cannot make a profit.—*Colman's Rural World.*

WHAT CONCERNS THE FARMER.

I have little patience with a certain class that pat the farmer on the back, metaphorically, praise his wonderful sagacity and intelligence, and then say to him, "Your business is to grow the crops; confine your whole attention to that. Others will sell them for you; you cannot be both farmer and merchant." Suppose they should say the same to a great manufacturer of implements, machinery, or fixtures of any sort. He would reply: "The selling of my products is more than half of my business. That taxes my resources and sagacity most of all. I should fail in business in a month if I did not sharply watch my sales."

Just so with the farmer. He, too, is a manufacturer. He, too, must sharply watch his sales. His eye must closely scan all that comes between the planting of the seed or the mating of the sire and dam, and the sale of the crop or animal to the final purchaser. All that comes between and tends to widen and deepen the chasm between the producer and consumer is his legitimate concern.—*Country Gentleman.*

Surely the most infantile engineering project that ever commanded a million dollars is that of the "gravity tunnel" to connect New York and Brooklyn. As set forth in a telegram, the plan is to give the tunnel an inclination toward the center from either end, and let the trains of passenger cars run down by gravity. It is calculated that the momentum will carry them "almost up the incline on the other side." From the point at which they stop they are to be hauled up with a cable. Any schoolboy ought to know that this short haul will require exactly the same expenditure of power (and therefore cost exactly as much) as it would to haul the whole distance on a level track—the time between termini being equal. The projector of this fascinating enterprise is of course to be President of the company, but he will hold his place as castellan in the tower of his own fortune by a precarious tenure. If ever a stockholder happens to open an elementary text-book on mechanics, Mr. Projector's gorgeous edifice will tumble about his ears like the baseless fabric of a claim against the Government.

The New York Experiment Station, upon the question of comparative profits in present and past farming in that State, arrives at this result: Taking five principal crops—corn, wheat, oats, potatoes, and hay—aggregating in value 92 per cent of all the leading crops, the average yield since the period from 1862 to 1870 has fallen off 8.8 per cent, while the market value of these crops has fallen to about 67½ per cent of the value then. Yet the labor to produce these crops costs just as much now as it did then, while selling for about two-thirds as much.

In a recent lecture, Prof. Brewer, of Yale College, illustrated the idea that "man is worth more than the land" by a case which came under his own observation. A man bought a farm for \$20 an acre. He so improved it that in a few years he was offered \$300 an acre for it. At his death it sold for \$250 an acre. In a few years the purchaser sold it for \$100 an acre to a man who finally disposed of it for \$12 an acre. Here it was plainly the men and not the farm that determined the value.

KANSAS THRIFT.

Ingalls has voted \$25,000 for the establishment of a sugar mill, cheese factory, and grist mill.

The biggest sugar manufacturing project ever proposed in Kansas has originated at Newton. The Kansas Central Sugar Company has been organized there. It proposes to build four sugar mills in Harvey County, each to cost \$100,000.

Wm. Braden, a prominent farmer residing in the western part of the county, last week marketed in Alton 15 eleven months' old hogs that averaged 319½ pounds each. Mr. Braden is of the decided opinion that he realized 40 cents per bushel for the corn fed to this lot of porkers. He also has 100 more fat hogs to turn off later in the season, besides 25 brood sows, one of which has raised 43 pigs within twelve months. Who says that stock farming doesn't pay in this country?—*Osborne Farmer.*

Horse-buyers have been very numerous in Waubunee County the past few weeks, and have taken to market a large number of our most valuable horses, but have left instead their worth in big round dollars. While the prices paid were not exorbitant, they were good considering the market, and the farmers did not seem anxious to sell unless they could secure their prices. In fact, one buyer informed us that he had to hunt the last car of horses he purchased, instead of having the owners hunt him, as he said was the usual custom.—*Alma Enterprise.*

The natural gas discovery and development at Cherryvale promises great things for that enterprising young city. The two wells already in successful flow furnish double the quantity of gas that can be consumed there at present, and this fact, together with the cheapness and superior quality of the gas, and the possibility of further development, unlimited as far as known, should prove a strong inducement to manufacturing enterprises. For domestic uses—fuel and light—it has already proved a bonanza to the citizens of that place, the cost to them being only 75 cents a month for each heater or range, and 25 cents per light. With the enterprise and go-aheadativeness of the citizens of Cherryvale, this invaluable find will undoubtedly be turned to good account in an industrial way.—*Wichita Eagle.*

The great corn cribs are fortresses against adversity. They mean a good State that will grow rich as soon as it has had time. There are people in Kansas who sneer about corn; say that it is so low that it cannot be made grand larceny to steal it, and generally grumble away the golden hours on the subject of corn. Such blasphemy against bounteous heaven. Such should get up and get out of church when the minister prays that God may be pleased to bless the labors of the husbandman. Such should have no place by the fire and be deprived of turkey as aliens and strangers on Thanksgiving day. Kansas, having corn, is great, and shall be greater.—*Noble L. Prentiss.*

ENGLISHMEN TO FOUND A FARM SCHOOL.

Several prominent Englishmen visited this country a year ago and examined the farm lands with a view of colonizing several hundred families from England. They thought a school was necessary first, in order that the emigrants might become acquainted with American farm life without any hazardous experiments. A company of English and American capitalists was organized with the object of buying a large farm and establishing an agricultural training school for young Englishmen. The agent of the company visited every county in the State, and Saturday purchased the farm of Whitsed Laming, near Tonganoxie, for \$23,000, possession to be given the 1st of June. Mr. Laming is a native of Cornwall, England, and before coming to this country was the steward of the estates of the Prince of Wales.

Three hundred acres of land bought by the company are in English blue-grass, 290 acres are under plow, and the orchard contains 1,200 apple trees and cherries, peaches, pears, and smaller fruits. Mr. Laming bought the farm eight years ago for \$15,000. The syndicate owns at present 50,000 of Kansas farm lands.

The training school will begin with over 100 students. A concert hall and a lecture room and an Episcopal Church will be added to the other buildings, and Bishop Thomas will appoint a Rector to take charge. Englishmen only will be admitted as students. The course will be similar to that of the Agricultural College at Manhattan.—*Arlington Enterprise.*

CALENDAR.

1889-90.
Fall Term—September 12th to December 20th.
Winter Term—January 7th to March 28th.
Spring Term—March 31st to June 11th.
June 11th, Commencement.
1890-91.
Fall Term—September 11th to December 19th.

TO SCHOOL OFFICERS.

The College Loan Commissioner has funds to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioners and the State Agricultural College. Address Jno. E. Hessian, Loan Commissioner, Manhattan, Kan.

LOCAL MATTERS.

Prof. Walters makes a business visit to Junction City today.

The quarterly meeting of the Board of Regents is called for Tuesday, April 22nd, at 3 P.M.

As director of the cantata, "Jephthah and his Daughter," at the Opera House on Thursday and Friday evenings, Prof. Brown won new honors for himself and the Musical Department.

The December number of the *Journal of Mycology* contains an article on "Status of the Sorghum Blight" by Prof. Kellerman and Assistant Swingle of the Experiment Station.

A few more warm days following the rain of nearly an inch will work a wonderful change in the appearance of the lawns. The growth of the grass has been greatly retarded by the dry weather of March.

The singers among the students are to have seats in Chapel near the orchestra for better balancing of parts and more perfect time. We shall then have a chorus of nearly one hundred voices and an orchestra of fifteen pieces.

The total enrollment for this term to date is 354, a very considerable increase over the 280 of a year ago, while the grand total for the year reaches this week 503. The higher classes number this term as follows: Fourth-years expecting to graduate, 26; Third-years, 50; Second-years, 74.

Secretary Graham and Professor Georgeson attended the meeting of the Kansas Dairy Association on Thursday afternoon at Abilene. They report an excellent meeting, with a goodly representation from all parts of the State. Prof. Georgeson's paper upon "Food for Dairy Stock," is published in the *Reflector*. Mr. Graham is a member of the Executive Committee.

Prof. Failyer lectured in Chapel yesterday afternoon on the subject "Something about Glass," presenting concisely and entertainingly the characteristics of glass, the many kinds, qualities, and colors, the various uses to which it is put, with an interesting description of methods of manufacture into many different forms. Illustrations were given to show the flexibility and brittleness of glass. The Professor concluded with a brief history of the discovery of the subject under consideration.

Prof. Popeno has exhaustive and interesting reports of the proceedings of the American Horticultural Society in its recent meeting at Austin, Texas, in the *Country Gentleman* and *Kansas Farmer*. The Professor, by the way, who, it will be remembered, was elected Secretary of the Society, has, by the resignation of Secetary Regan, of Greencastle, Ind., on account of ill-health, three months before the expiration of his term, been called upon to assume the duties of his new position at once.

In the experimental gardens there have been planted sixty odd kinds of potatoes, the seed having been obtained from several different plantings of the same varieties last year. The first planting last season was made March 15th, the second a month later, and the third from seed obtained from the first, the latter crop being harvested about the first of November. This year's crop will in a measure determine whether or not there is any value in the experiment so far as producing extra early varieties is concerned.

The following new books have been added to the Library since the last report: Memorial Addresses on Hon. A. Logan; Second Annual Report, Cornell Experimental Station, 1889; Report of Secretary of Treasury, 1889; Official Records, War of Rebellion, vol. 26, part 1; Smithsonian Report, 1889, parts 1 and 2, and 1887, parts 1 and 2; the Complete Grazier, from Capt. W.

Mitchell, Wabaunsee, Kan.; Wilhelm's Military Dictionary; the American Krugspiel, 2 vols.; Strategos, 2 vols. The last five named are donated by Lieut. Morrison.

The postponed Annual Exhibition of the Webster Society, Tuesday evening, called out a large audience who liberally applauded all that was good—and everything on the programme was so pronounced. Both the literary and musical features of the entertainment were fully up to the Webster standard. Special mention should be made of the "Webster Glee," composed by T. E. Wimer and set to music by Prof. Brown. The following is the programme:

Overture.....	Serenade
	Webster Band.
	Invocation.
Address.....	Revolution or Reform
	C. J. Dobbs.
	Discussion:
Resolved, That Education is the preferable solution of the Negro Problem.	
Affirmative, S. N. Chaffee.	
Negative, H. W. Avery.	
Music.....	Webster Glee
	Glee Club.
Oration.....	Private Corporations
	W. L. Morse.
Society Paper.....	Webster Reporter
	H. N. Whitford.
Oration.....	Philosophy and Progress
	E. T. Martin.
Music.....	General Moon's March
Play.....	Diamond Cut Diamond
	Jno. Davis, Committee.
Quartette.....	Fair Dove, O Fond Dove
	Committee on Music, W. H. Sanders.

The handsome programmes were the design of President Stoker, and were the product of the Printing Department.

GRADUATES AND FORMER STUDENTS.

Mary E. Hall, Second-year in 1888-9, has been visiting her sister and other friends at College during the past week.

Geo. H. Deibler, Third-year in 1886-7, was married, April 3rd, to Anna P. Mitchell, of Florence, a student of last year.

C. G. Clark, '88, is spending his vacation from Washburn College in visiting his Manhattan friends, including, of course, the College.

J. W. Bayles, '89, visited friends at the College yesterday. He will "farm it" this summer on the paternal quarter section in the Blue bottom.

Winifred S. Cotton, Second-year in 1888-9, gained a vacation in her school to attend the Webster Annual Exhibition last week, but on account of the postponement was deprived of the pleasure.

Miss Harkness, a special student here during the winter in preparation for teaching cooking and sewing at the South Dakota Agricultural College, writes of the successful opening of her work at Brookings.

Several students of previous years have returned to the ranks this term. Among them are noticed G. A. Browning, Second-year in 1884; J. E. Calvin, First-year in 1884; P. S. Creager, Third-year in 1886; O. G. Harman and W. R. Spilman, Second-years in 1887; Tina Louisa Coburn, Third-year in 1888-9; and Ada Rice and J. R. McNinch, students of last year.

A. A. Mills, '89, received a telegram yesterday announcing his appointment as Assistant to the Director of the new Experiment Station of Utah, located at Logan. His salary is to be one thousand dollars, and his duties seem specially adapted to his abilities and training. As Mr. Mills, previous to his entering this College, had spent his life on a Utah farm, he has the advantage of familiar acquaintance with the agriculture of the Territory to aid in his work. We shall expect a good report of his future efforts.

INDUSTRIAL TRAINING.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have Farming, Gardening, and Fruit-growing, Carpentry, Cabinet-making, Iron-work, Printing, or Telegraphy. Young women may take Sewing, Printing, Telegraphy, Floriculture, or Music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second year and the fall term of the third year, upon the farm, gardens, and orchards. Young women take their industrials for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen, laboratory and dairy.

THE WEATHER FOR MARCH.

BY ASST. C. M. BRESEE.

The old saw, that if March comes in like a lion it will go out like a lamb, was in this case, perhaps, the exception that proves the rule (?); at any rate, the weather at both the incoming and the outgoing of the month was decidedly disagreeable.

The mean temperature for the month was 37.177° , which is 3.76° cooler than the average. Of the thirty-one other Marches on our record, twenty-three have been warmer, and eight cooler; the extremes being 50.89° in 1860, and 24.76° in 1867. The highest temperature for the month was 77° on the 20th; the lowest, 2° on the 2nd, a range of 75° . The warmest day was the 23rd, the mean temperature for the day being 56.75° . The coldest day was the first, the mean temperature being 12.25° .

The mean temperature of the observations at 7 A. M. was 29.58° ; at 2 P. M., 48.55° ; at 9 P. M., 35.29° . With the maximum thermometer, the mean was 53.16° ; with the minimum, 24.77° ; the mean of these two being 38.965° .

The precipitation was light, being but .133 inch, which is 1.02 inches below normal. The highest recorded rainfall for March was in 1876, 3.96 inches falling. The scanty rainfall of February and March is productive of no disastrous results so far as crops are concerned, but has subjected many to considerable inconvenience from the failure of the water supply of cisterns. The effects were also disagreeably noticeable in the clouds of dust which filled the air during the heavy winds the latter part of the month. About .4 of an inch of snow fell in the month, the most of it falling on the evening of the 30th.

The mean barometer for the month was 28.947 inches; at 7 A. M., 28.945 inches; at 2 P. M., 28.91 inches; at 9 P. M., 28.985 inches. Maximum, 29.465 inches, at 7 A. M. on the 15th; minimum, 27.928 inches, at 7 A. M. on the 27th; monthly range, 1.537 inches.

There were four cloudless days, the 13th, 21st, 25th, and 28th; and five entirely cloudy ones, the 6th, 9th, 10th, 27th, and 30th. Thirteen days were at least two-thirds cloudy, and eighteen days were less than two-thirds cloudy. There was a fog on the morning of the 12th.

The wind was from the east seventeen times; northeast, fifteen times; west, eleven times; northwest, eleven times; southwest, ten times; north, ten times; southeast, eight times; south, three times, and a calm eight times at the hour of observation. The total run of the wind for the month was 8,180 miles. This gives a mean daily velocity of 263.87 miles, and a mean hourly velocity of 10.99 miles. The highest daily velocity was 630 miles, on the 27th; the lowest, 89 miles, on the 15th. The highest hourly velocity was 46 miles, on the 24th, between 2 and 3 A. M.

The table below gives a comparison with the preceding Marches:

March.	Number of Rains.	Rain in inches.	Mean Temperature.	Maximum Temperature.	Minimum Temperature.	Mean Barometer.	Maximum Barometer.	Minimum Barometer.
1858			47.90	74	29			
1859	6	2.88	45.95	74	29			
1860	0	.00	50.89	81	24			
1861	0	.00	42.60	80	20			
1862	0	.00	38.57	85	33			
1863	0	.00	47.01	86	20			
1864	5	2.12	38.35	68	19			
1865	6	2.27	41.90	74	30			
1866								
1867	4	.63	24.76	52	-9			
1868	5	.93	49.42	87	19			
1869	4	1.06	35.68	72	-2	28.80	29.30	28.30
1870	5	1.45	36.19	68	0	28.69	29.15	28.20
1871	4	1.02	47.22	83	20			
1872	5	.92	38.71	73	18			
1873	4	.71	42.47	74	3			
1874	1	.30	37.10	68	18	28.64	29.14	28.20
1875	2	1.21	36.80	80	5	28.65	29.06	28.32
1876	6	3.06	32.00	66	5	28.68	29.25	28.33
1877	3	2.70	38.87	76	3	28.76	29.10	28.23
1878	5	1.77	49.29	78	17	28.67	29.00	28.15
1879	0	.00	46.64	85	10	28.65	29.14	28.22
1880	2	.50	41.04	80	-2	28.55	28.99	27.92
1881	1	.75	36.21	72	13	28.54	28.91	27.80
1882	2	.80	46.72	78	12	28.66	29.15	28.04
1883	3	1.05	39.30	73	13	28.70	29.23	28.10
1884	5	2.36	40.20	75	8	28.72	29.10	27.82
1885	0	.00	40.61	73	15			
1886	6	1.55	39.16	82	9	28.90	29.39	28.36
1887	4	.42	42.40	83	23	28.66	29.47	28.61
1888	5	2.48	35.77	83	6	29.05	29.55	28.47
1889	3	1.89	43.01	77	15	29.05	29.42	28.45
1890	5	.13	37.18	77	2	28.95	29.40	27.93
Sums	101	35.86	1310.07	2363	333	517.62	525.81	507.48
Means	3	1.16	40.94	76.3	10.7	28.756	29.21	28.19

THE INDUSTRIALIST.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

Lane University reports eight volunteers and \$50 in cash for foreign missions.

The stars and stripes are floating proudly over the schools of Almena, Norton County.

The Spring Term of Cooper College at Sterling commenced April 1st with a good attendance.

Grand preparations are being made at Topeka for the Kansas Chautauqua, to be held there this summer.

The Clay County teachers will hold their last meeting of the school year at Clay Center on April 19th.

A number of Norton County teachers will attend the spring term of the State Normal School at Emporia.

A class of twelve will graduate this year from Washburn College—eleven young men and one young woman.

The State Normal has set its mark at 1,000 students this year, and the indications are favorable for it getting them.

The proposition to vote \$12,000 bonds to finish Campbell University building was carried by the citizens of Holton by a large majority.

Mother Catherine, of Colorado Springs, has been appointed to fill the place of Mother Bridget, deceased, of St. Ann's Academy, near Parsons.

Salina Normal College had its commencement last week. There were eight graduates. The class orations were given by Mr. Stoll and Mr. Burke.

Mr. D. C. Nutting and Miss Katie J. Browne, of Norton, have been called to the principalship and assistant principalship of the Phillipsburg schools.

The Southeastern Kansas Teachers' Association met at Parsons, Friday and Saturday of last week. The attendance was very large, over 500 registering, although the weather was anything but favorable.

The location selected for the new Methodist University at Topeka is nearly a mile west of Washburn College. The plans for the building have been drawn, and work will be begun on the main buildings in June. The estimated cost of the buildings is \$75,000.

A good sign for our dusky neighbors! "The building of the Seminole Seminary, fifty miles east of Norman, in the town of Mikasukee, in the Seminole Nation, is going rapidly on. The building is of brick, four stories high, and is being built by the Seminole Indians at a cost of \$46,000.

The news from Chicago is that the recently formed school book trust among the leading publishers of the country has determined on a horizontal reduction of 25 per cent in the price of all school books, the cut to go into effect May 1st. This is in many respects better than the Blair bill. All will vote for cheaper text-books.

An exchange says: "A large tract of land near Tonganoxie has been purchased by an English syndicate, who will establish upon it an agricultural training school for the instruction of young men from England. A college will be built which will accommodate 100 students, and in connection with the school there will be a lecture room, a concert hall, and a church.

Professor William Macdonald, Dean of the Music Department of the State University, has resigned his position and will leave the institution at the end of the college year. He will take special work at Harvard University in philosophy and literature for four years. He has been connected with the State University for six years and made the Music Department what it is.

The Haskell Institute at Lawrence, named in honor of the late Dudley C. Haskell, owns 490 acres of land, with thirty-nine buildings valued at \$125,000. There are 450 students, ranging from 5 to 28 years of age, 300 of them being boys. Twenty tribes are now represented, including the Pottawatomie, Seneca, Oneida, Kiowa, Sioux, Pawnee, Shawnee, Pawqua, Seminole, Delaware, Wyandotte, Cherokee, Creek, Chicasaw, Ponca, Peoria, Otoe, Caddo, Wichita, Cheyenne, and Arapahoe. The Cheyennes have the largest representation. The cost of educating the Indian is figured

at \$175 each per year. The appropriation asked for this institution for the coming year is \$125,000.

Winfield College has no President as yet. The *Courier* says: "The Trustees' Committee on Faculty have intimated that the election of a new President will not occur before the regular meeting of the Board in June. In the interim, the work of the College is under the immediate control of the Faculty, who have distributed among themselves the executive functions in addition to their regular duties."

MEANS OF ILLUSTRATION.

Agriculture.—Two farms of 215 and 100 acres, for the most part surrounded by durable stone walls, subdivided into fields of variable size to suit the system of management.

A large variety of standard grains and forage crops in cultivation in fields and experimental plots.

A barn 50 by 75 feet, expressly arranged for experimental uses; and connected with it a general-purpose barn, 48 by 96 feet, for grain, hay, horses, and cattle. Both buildings are of stone, and are provided with steam power, and equipped with improved machinery for shelling, grinding, threshing, cutting for the silo, and steaming.

Two piggeries, one of ten pens for experimental uses, and one of six pens, with separate yards, for general purposes.

An implement house 22 by 50 feet, of two stories, and corn-cribs. Shorthorn, Aberdeen-Angus, Hereford, and Jersey cattle; Berkshire and Poland-China swine.

Farm implements of improved patterns.

Collections of grains, grasses, and forage plants.

Buildings, stock, and equipments are valued at \$25,000.

Horticulture and Entomology.—Orchards containing 275 varieties of apples, 50 of peaches, 50 of pears, 16 of plums, 20 of cherries, and 10 of apricots.

Small-fruit garden, with 200 varieties of small fruit, including blackberries, raspberries, gooseberries, currants, and strawberries; and vineyard, with 75 varieties of grapes.

Forest plantation of twelve acres, containing twenty varieties of from ten to fifteen years' growth.

Ornamental grounds, set with a variety of evergreens and deciduous trees. Sample rows, containing about 150 varieties of ornamental and useful shrubs and trees, labeled.

Vegetable garden, with hot-beds and cold-frames and experimental beds. Practice rows for students' budding, grafting, cultivating, and pruning.

Two well-planned and furnished greenhouses of three rooms each, stocked with a collection of native and exotic plants.

Museum, containing a collection of woods from American forests, and a large series of specimens in economic and general entomology.

Value of property, exclusive of orchards and grounds, \$11,500.

Chemistry and Mineralogy.—Eight rooms, fitted with tables and apparatus for a class of eighty students in qualitative analysis, sixteen in quantitative analysis, including necessary facilities for assaying, with a mineralogical collection and general illustrative apparatus. Value, exclusive of building, \$7,500.

Botany.—A general herbarium, consisting of a large collection of plants of the United States and other countries; a Kansas herbarium, containing specimens illustrating the distribution and variation of plants throughout the State; also twenty-one compound microscopes, three dissecting microscopes, tools, reagents, wall-charts, etc. Valued at \$2,500.

Geology, Zoology, and Veterinary Science.—A general museum well fitted with cases containing valuable collections of mounted Kansas mammals and birds, with mounted skeletons of wild and domestic animals. The largest collection of Kansas fishes and molluscs in the State. Kansas reptiles and batrachians, salt-water fishes and invertebrates in alcohol. Collections of Mound-builders' and Indian relics. Kansas fossils and rocks, typical of the geological ages found in the State.

In Veterinary Science: A laboratory fitted with apparatus and reagents, for the study of disease. A collection of charts, models, and anatomical preparations, illustrating healthy and diseased structure. Value, \$4,500.

Drawing.—Models, plaster-casts, patterns, charts, easels, and implements. Valued at \$1,400.

Physics.—Physical apparatus, meteorological instruments, etc. Edelman's dynamo electric machine, with numerous accessories, sling psychrometer, and anemometer. The value of the whole is \$2,000.

Mathematics and Surveying.—Transits, compasses, levels, chains, models, etc. Valued at \$1,000.

Mechanics and Engineering.—Carpenter shop, with separate benches and tools for forty-five students in each class, besides lathes, mortising machine, circular saws, band saws, planer, friezer, boring machine, grinder, and general chest of tools for fine work. Power furnished by a ten-horse-power Atlas engine.

Shops for iron work, with forges, vises, drills, etc. Testing machine, charts, and models.

Inventory of material and apparatus in both shops, \$5,800.

Kitchen Laboratory, with ranges, cooking utensils, dining-room furnishings, dairy furniture; valued at \$500.

Printing.—Office, with thirty pairs of cases, large fonts of six point, eight-point, ten-point, and eleven-point Roman type; a good assortment of job type and brass rule; a Babcock cylinder press with steam power, a Gordon job press; a mitering machine, a rule curving machine, and a paper cutter. Value of equipment, \$3,500.

Telegraphy.—Office, with five miles of line, connecting twenty branch offices, and as many instruments. Inventory, \$1,000.

Sewing Rooms, with six machines, models, patterns, and cases, worth \$550.

Music Rooms, with four pianos, four organs, and other instruments, valued at \$1,500.

A Library, carefully selected and catalogued, containing over 9,000 bound volumes, and 2,500 pamphlets. A reading-room is maintained in connection with the library, where may be found on file forty-five of the leading literary, scientific, technical, and agricultural periodicals, and several hundred newspapers, including the principal daily and county papers from all parts of the State. Value of library, \$1,500.

Armory, containing one hundred and fifty stands of arms (breach-loading cadet rifles, caliber .45), with accoutrements; two three-inch rifled guns; also swords, uniforms, etc. Value, exclusive of arms, \$800.

The Great Bend mills are jubilant over the receipt of a letter from Belgium stating that their flour is the best received from America.—*Leoti Standard*.

EXPENSES.

Tuition is free, and no general fee for incidental or contingent expenses is charged. In a few special departments of instruction, the following payments are made in advance to the Secretary:

In the term of Analytical Chemistry, students pay \$3 for the chemicals and apparatus used in their laboratory practice and analysis.

In the Printing Office, young men, in their first year, pay \$3 a term for office expenses. Advanced students have the use of the office for the work performed during the industrial hours.

In Telegraphy, young men pay \$3 a term for office expenses.

Young women are furnished both Printing and Telegraphy free of expense, these two offices, with the Sewing and Cooking Departments, being provided especially for their industrial training.

Lessons in instrumental music—two a week—are from \$10 to \$20 a term, according to its length; one a week, \$6 to \$8.50. One-half is to be paid to the instructor in charge with the first lesson, the other half at the middle of the term.

The cost of text-books at the book stores is, for the first year, about \$4 a term; for the second year, \$2.75 a term; for the third year, \$7 a term; and for the fourth year, \$5.50 a term.

The expenses for apparatus and tools to each student during the course are as follows: Drawing, \$3.50; microscope for Botany and Entomology, \$1.50; case, pins, etc., for Entomology, \$2.25; rules, in carpentry 25 cents, printing 25 cents. The total expense for these articles during the four years is less than ten dollars.

Board and washing are not furnished by the College. Board, with furnished rooms, can be procured in private families at from \$2.75 to \$4 per week. Some students board themselves at even less cost; and rooms for the purpose can be obtained at a rent of from \$1 to \$3.50 a month. Washing costs from 50c. to \$1 a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$100 to \$200 a year.

LABOR AND EARNINGS.

Every encouragement is given to habits of daily manual labor during the College course. Only one hour of daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their abilities and means.

All labor at the College is under the direction of the Superintendents of the departments, and offers opportunity for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed.

The shops and offices are opened afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed—outside of required hours of labor—upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates varying with services rendered, from eight to ten cents an hour. The Superintendents strive to adjust their work to the necessities of students, and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay-roll for the past year ranges from \$250 to \$400.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term time, or from other sources, for the larger part of their expenses. The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

MANHATTAN ADVERTISEMENTS.

R. ALLINGHAM, dealer in Fresh and Salt Meats. Special attention to student trade. Goods delivered free.

W. P. HOLMAN,—Drugs and Toilet articles, Fancy Groceries, etc. Fruits, Confectionery, Nuts, Cigars and Tobacco.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

MICROSCOPES.—Swingle and Varney's Bookstore is the place to get your Microscopes, Dissecting Glasses, Text-books, and Student's Supplies of all kinds.

PICKETT'S NEW LIVERY STABLE.—Everything new and strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

BATH ROOMS.—At Manhattan Shaving Parlor, South Second Street. Hot and cold baths always ready. Everything first-class. Special care taken with ladies' and children's hair cutting. Razors bought and sold. Give me a call. PETE HOSTRUP, Proprietor.

ESLIE H. SMITH, Boots and Shoes, 302 Poyntz Avenue, first door west of Stingley & Huntress. A full line of Rubber foot wear of the best quality at the lowest prices. Mens' all Solid Leather Dress Shoes, \$1.65. Ladies' Fine Dongola Button Shoes, \$2.00. Reliable goods at low prices.

MANHATTAN BANK.—E. B. Purcell, banker. J. W. Webb, Cashier. A general banking business transacted. Bills of Exchange issued on all principal cities and towns of Europe. All bills have personal, faithful, and prompt attention of our attorneys. Proceeds remitted promptly, at current rates of exchange, without any charge of commission.

E. B. PURCELL, Corner of Poyntz Avenue and Second Street, has the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered in all parts of the city and at the College, free of charge.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds. Watches, Clocks, a magnificent line of Jewelry of the best makes. A big variety of Notions that students need. Musical Instruments, Strings, Sheet Music, Instruction Books. Our collection of Specacles in gold, silver, and steel cannot be beat. Don't forget our ten-cent bargain counter. Everything at lowest living prices. —"75."

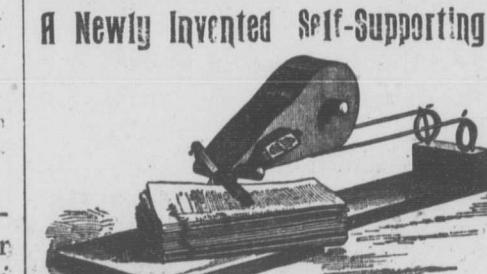
A Newly Invented Self-Supporting Mailing Machine,

and with it a wrapper cabinet, which is an addition of great convenience. Better and more work can be done by it than by any other.

NO ROYALTY. Will be sent on trial subject to approval. Send for descriptive circulars.

Sold only by the inventor.

J. C. HARDIE, Jr., Canton, N. Y.



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C. A. GUNDAKER, Blacksmith Shop.
W. L. HOUSE, Carpenter Shop.
A. C. MC CREADY, Janitor.
W. T. SWINGLE, Assistant in Botany.

GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week-day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

FARM MORTGAGES.

BY PROF. F. H. WHITE.

THERE have been published lately three carefully prepared articles on the subject of farm mortgages, and we propose to state very briefly the chief arguments used in each, and to give a few of the facts presented in support of some of the conclusions.

We will take, first, the article by Mr. W. F. Mappin, which appeared in the September number of the *Political Science Quarterly*. He admits that the mortgage indebtedness of the New West is increasing, but does not think that this fact is alarming, for borrowed capital is absolutely necessary to secure the rapid development of a new country. Without mortgages, progress would be very slow. The New West is making greater advancement in one year than the Old West did in ten. Railroads are, of course, an important factor in this rapid development, but so also is the eastern money which the settlers have borrowed and used in building houses and fencing, buying machinery and cattle, and making improvements. Turning to the Old West, the writer calls special attention to the large amount of money expended annually in Indiana for tiling and building gravel roads, which he estimates to be not less than four millions. There is no question that the land in that State has greatly risen in value in consequence of these improvements. A considerable portion of the increased indebtedness in the West is attributable to the fact that farmers have mortgaged their own farms in order to get money to give their sons a start. The Nebraska Labor Bureau's report for 1887-88 contains a chapter on farmers' failures based upon the answers obtained from farmers to inquiries addressed to them by the Bureau. The larger number reply, "too high rates of interest." This Mr. Mappin interprets to mean, not farm-mortgage interest, which ranges from six to eight per cent, but interest drawn from short-time loans obtained of banks or individuals. Other reasons were assigned, as "too high rates of freight;" "too much drinking;" "too much land to cultivate properly;" "carelessness about going into debt;" "buying too much machinery;" "poor crops." Comparatively few replied, "too many mortgages."

The *Forum* for March has an article by Prof. Gleed, of the State University, on the same subject. He gives a very clear exposition of the mortgage business, speaks of the enormous profits made by many of the mortgage brokers,—citing the case of one of them in Kansas who has made nearly \$10,000,000 since 1870, and arrived at this conclusion: "The amount of capital advanced has been great, but not out of proportion to the results achieved. The purpose was legitimate, and not of the nature of a South Sea bubble. Great advantages have resulted to the settlers, the bankers, and, thus far, to the capitalists. Losses to capitalists have been small, compared with losses in other lines of investment. Present conditions and future prospects seem to justify caution, but not alarm." In 1870, the total wealth of Kansas, subject to taxation, was \$366,583,472; in 1888, \$1,412,230,796. This great increase in wealth he believes is due in large part to mortgages, free public lands, and immigration.

The article by Mr. J. P. Dunn, Jr., which appears in the *Political Science Quarterly* for March, contains conclusions considerably at variance from the views already given. The writer calculates that the annual payment of interest on mortgage indebtedness in the three States of Illinois, Michigan, and Indiana is about \$29,000,000. The "alarmists" he thinks, have not materially exaggerated the existing conditions. "The most seri-

ous effects of a state of general indebtedness are two: first its aggravating force in times of financial depression; second, its constant drain on the production of the commonwealth." Attention is called to the fact that mortgage indebtedness is not the only cause of the steady drain of profits from the West to the East.

The payment of insurance premiums in excess of losses paid, and the profits of the railroads, go, almost entirely, to non-residents. Mr. Dunn replies as follows to those who regard a general state of indebtedness a blessing: "There are comparatively few uses to which borrowed money may be put that will preserve the principal intact and yield a profit greater than the interest, and of those that do exist the greater portion must be classed as lucky speculations. If this were not true, the men who have capital would themselves employ it in such investments as would yield them greater returns." He makes the assertion, without giving any proof, that the money borrowed does not go into substantial betterments or judicious enterprises, but is wasted in profitless extravagance or unfortunate speculations.

When able men who have made a special study of the subject, and have had unusual opportunities for observation, differ so widely, the complexity of the problem and the inadequacy of data is apparent. The statistics in regard to mortgage indebtedness are very misleading. The tables usually show merely the original amount, and not the credits, which may be almost equal to the face value of the mortgages. We must suspend our judgment as to whether there has been a great increase of mortgage indebtedness out of proportion to the increase of population until our labor bureaus or census reports give us more reliable figures. Opinions in regard to the use which borrowers make of their money will vary somewhat, of course, according to one's field of observation; and yet the marvelous increase in taxable property of Kansas ought to go far in rebuttal of Mr. Dunn's statement that the money borrowed is generally wasted.

CROSSING VARIETIES OF CORN.

BY PROF. W. A. KELLERMAN.

THE Botanical Department has for the past two years been testing the matter of crossing varieties of Indian corn. It is claimed by some that varieties do not cross; by others, that crossing freely and invariably takes place if the different varieties are planted near each other. It is also sometimes asserted that the effect, when crossing does take place, is visible the first year. By others it is claimed that no evidence can be detected the first year, but that the effect is shown in the second year's product. Our experiments were conducted not only for the purpose of obtaining data upon which to base conclusions in reference to the above points, but also with a view of improving varieties by means of desirable crosses.

In order to effect the crossing, the ears were enclosed with cotton cloth just before the silk emerged from the husks. Sacks of the same material were used to enclose the tassel in order to obtain the pollen when mature. When the silk was fully protruded and in a receptive condition, the sack enclosing the ear was carefully lifted. On the silk thus exposed the desired pollen was dusted, and the sack immediately readjusted over the ear. In this manner crosses were made at will.

In several cases no pollen was applied to the silk, and, while the cob developed to nearly its normal length and diameter, not a single grain in any case was formed. This result showed that the cloth

used for the sacks was absolutely pollen proof, and that the ears bearing grain were really crosses.

The results of the test in 1888 were as follows: Crossing was attempted in 66 cases; of these, 39, or 59 per cent, were successful. In 1889, 189 cases were attempted, of which 175, or 92½ per cent, were successful. The mode of manipulation was the same, and equal care was taken both years. Had the former season been as favorable as the latter, the percentage of successful crosses would likely have been equally high.

In regard to the visible effects the first or same year, it can be said that they were either slight or not at all evident. The slightest variation, even in color, from the female toward the male parent was considered evidence. In case of the crosses of the dent, flint, and soft varieties in 1888, only seven and one-half per cent of the ears showed such unmistakable evidence of the cross; nineteen per cent presented doubtful evidence, and seventy-three per cent showed no evidence whatever of the cross. In 1889, a little more than twenty-four per cent of the ears presented evidence of the cross—nearly half of these merely showing the effect of the cross in the coloring; 12½ per cent of the ears were doubtful; and 63 per cent showed no effect whatever. The varieties of sweet corn not only cross freely, but usually show the effects the first year—only two out of ten cases in 1888 showing absolutely no evidence of the cross. In 1889 no varieties of sweet corn were planted.

The ears, when enclosed in sacks, are slightly hindered in development, though they usually attain a fair size and become fairly well filled if the pollen is applied at the proper time.

Figures are here given of six crosses selected from ears obtained in 1889.

The effects of crossing seen in the second year's crop will be given subsequently.

HOW TO SHORTEN THE WORKING DAY.

The real point at issue is one of ways and means. Shall the shorter day come through legislation, and, if so, how far shall legislation proceed? Admitting for the moment the right of the State to deal with such questions, if it be expedient, let us see if it is expedient to take such action now. If it be found inexpedient, then the larger question of authority will arise.

It must be at once conceded that an enlargement of social opportunity, to produce beneficial results, can proceed no faster than those to whom the opportunity comes can profitably use it. Any such change must be gradual. Not only this, but it should be general. The more these practical limitations are respected, the less will be the industrial shock and the greater the benefit. In many industries and in some States, an immediate reduction of hours from ten to eight would be entirely impracticable, and ought not to be attempted. On the other hand, the eight-hour day could at once be generally introduced in certain industries with benefit to all. If we are agreed upon the general desirability of a shorter day, then the question of its exact length becomes a practical question to be settled as to every case upon its merits.

It is clearly apparent, I think, that legislation upon this matter in any single State cannot be safely carried far in advance of that in other States. Otherwise industries may be seriously affected, or even destroyed altogether. So closely are we bound together in this modern world that no great advance can be made by one community beyond the point reached by all. It is a hopeful sign that the discussion is not confined to our country, but is agitating every industrial center.

Believing thoroughly in the benefits to be derived from a shorter working day, believing also that these benefits will be shared by both capital and labor, I see no more practical way of bringing it about than the general enlightenment of public opinion, the general agitation of the question, and the mutual agreement of capital and labor. This course has already proved effectual in the building

trades and some others. When public sentiment makes the other day possible, law may properly play its part in restraining the cupidity of individuals, or in protecting the weak against the strong. Its coming may be hastened by a clear comprehension of its probable effect in benefiting all. In proportion as this is made plain, opposition will cease, and without legislation the desired result will be secured.—*Chief of Massachusetts Bureau of Labor Statistics, in the Congregationalist.*

HOW TO TELL GOOD COWS.

Some of the external indications of a good butter-producing cow are:—

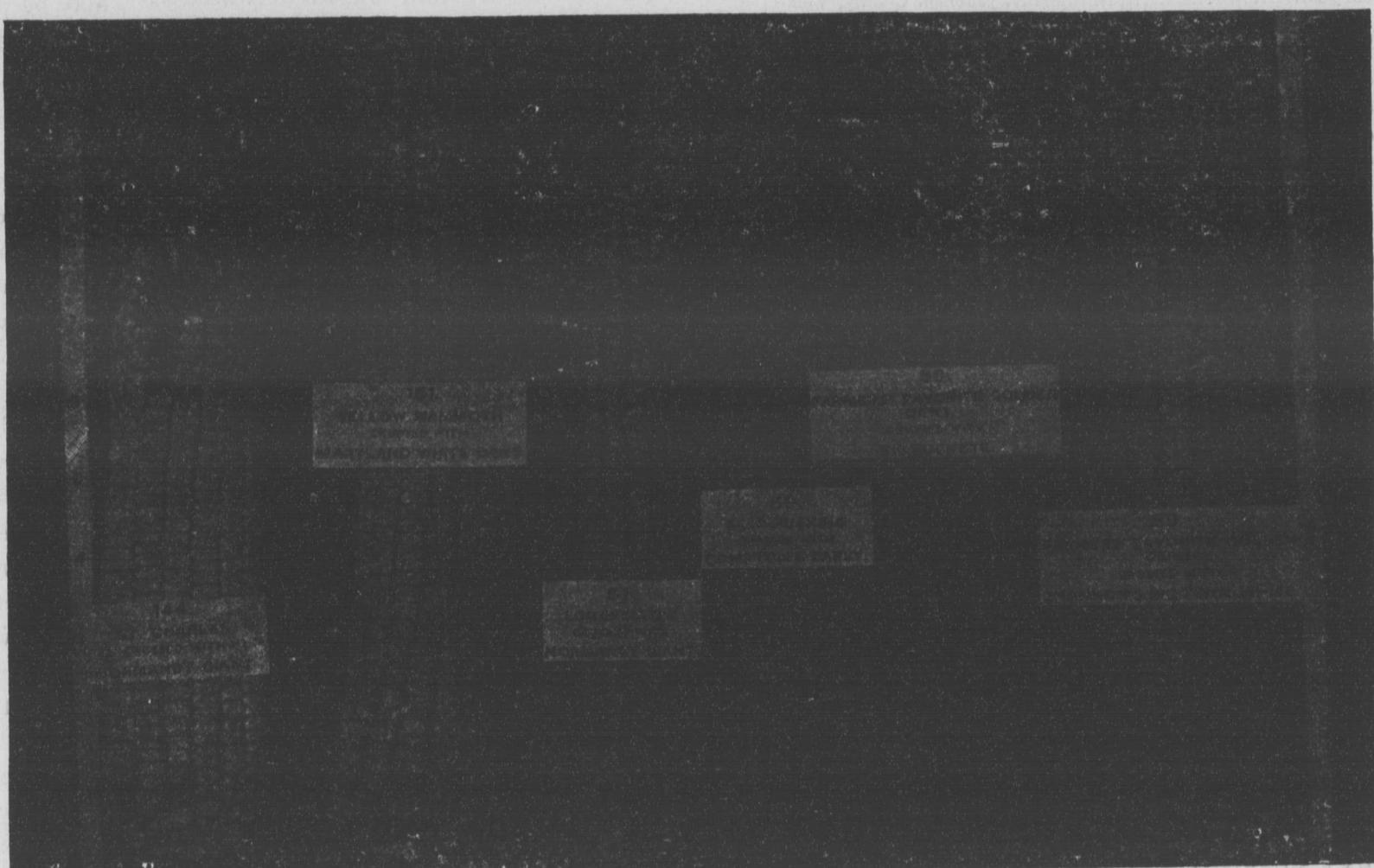
1. A large, evenly balanced udder extending well forward and backwards.
2. Good-sized teats, not set too closely together, yielding their milk easily, and in large, smooth streams.
3. A broad posterior, with body tapering towards

KANSAS THRIFT.

A negro in Graham County marketed a ton of cotton at Hill City. It is said that quite a number of the farmers of that County will turn their attention to this southern crop next summer.—*Osborne Farmer.*

The Kansas Cane Growers' Association organized at Hutchinson, by the election of Eli Kerns, of Fort Scott, President, and W. P. Clement, of Sterling, Secretary. Fifteen counties were represented in the meeting.

M. Carringer, living six miles northwest of South Haven, has been drilling some time for coal. When at the depth of 125 feet, he struck a fine flow of oil, the volume and strength of which increased as the drilling continued. Mr. Carringer



CROSSED VARIETIES OF CORN.

the head, giving ample room for a large escutcheon and development of the udder, with loose folds of skin in rear of udder in heifers and cows not in full flow of milk.

4. A good development of digestive organs.
5. A large, crooked, well-developed milk vein.
6. A thin, pliable skin, with its accompaniment, a fine, soft coat.
7. A nervous but docile temperament.

8. Small, delicately formed head and horns, with none of the coarse, ox-like appearance peculiar to ill-bred stock.—*Colman's Rural World.*

Compare with the above the following from "The Complete Grazier," published in 1805:—

"A perfect cow ought to have a broad, smooth forehead; black eyes; large, clear horns; a long, thin skin; a large, deep body; strong, muscular thighs; a large, white udder with four teats."

WOMEN AS GOVERNMENT CLERKS.

The first girl ever employed as a clerk in the Government departments at Washington was a school teacher named Jennie Douglass. Her school being broken up by the war, Gen. E. F. Spinner interceded with the Secretary of the Treasury to give her a clerkship. Mr. Spinner had been a banker, and often got his wife and daughters to trim bank-notes for him, as they performed this work more rapidly and neatly than his clerks. He stated this fact to Secretary Chase, who very reluctantly consented to the innovation of a girl in the Treasury Department. The legal-tender notes came from the engravers in New York in sheets, with blank margins all around, four notes on each sheet. General Spinner gave her a pair of long shears, and taught her how to trim the whole length of a sheet at a single clip. She proved an apt pupil, and the very first day did more work than either of the young men, who received one hundred dollars a month, while she was paid fifty. This was in 1882. During that year seven young women were appointed to clerkships, and now they are employed by the thousands in the various departments.—*The Congregationalist.*

is quite enthusiastic over the matter, and intends pushing things in a short time until the full strength of the flow is tested.—*South Haven New Era.*

The good work of the Immigration Society seems already to be bearing fruit. The Secretary has received 4,000 applications for information concerning Kansas, and the work has only fairly begun.—*Leoti Standard.*

William Way, a farmer of this county, states that the butter he has made from the milk of four cows has brought more clear cash with less work than the raising of 700 bushels of corn at the present rates.—*Chetopa Advance.*

Pres. Fairchild, of the Agricultural College, is of the opinion that "no organization, however extensive, is worth its cost, unless its aims are definite and clearly understood. Farmers need to settle upon the one line of action that is needed first and follow it; then the time will come to settle another line, and act accordingly." This is good advice, and the farmers will act in that line. It will require a little time to learn what ails them; then they will decide upon remedies and follow the way that leads to success.—*Kansas Farmer.*

Last fall cattle were low—lower than known for many years in the market. Stock-raisers were threatened with bankruptcy. And yet we wish to state a real occurrence that took place in Saline County. One of our oldest and best farmers purchased, last fall, thirty head of steers that cost him thirty dollars a head. Had he shipped them then, just off the grass, as the great Texas herds were glutting the market, he would have lost money on them. He sent them to a farm on Gypsum Creek, and they were stall-fed, the expense of grain, hay, and feeding being eight dollars and fifty cents a head. He sold them, and they averaged fifty-four dollars, a clear profit of fifteen dollars and fifty cents a head, or more than fifty per cent on his investment. Pretty good for a "bad" year. What one man can do, another can do.—*Salina Republican.*

CALENDAR.

1889-90.
 Fall Term—September 12th to December 20th.
 Winter Term—January 7th to March 28th.
 Spring Term—March 31st to June 11th.
 June 11th, Commencement.
 1890-91.
 Fall Term—September 11th to December 19th.

TO SCHOOL OFFICERS.

The College Loan Commissioner has funds to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioners and the State Agricultural College. Address Jno. E. Hessian, Loan Commissioner, Manhattan, Kan.

LOCAL MATTERS.

Board meeting April 22nd.

Prof. Brown is in Kansas City today.

Prof. Georgeson has added a horse and buggy to his chattels.

The drives have undergone repairs this week which greatly improve their appearance.

The bound volumes of the INDUSTRIALIST for 1888-89 are received from the State Printer.

The speakers for the Under-graduates' Exhibition, eight in number, will be chosen next week.

Several College officers lose sums varying from \$3.00 to \$482.00 by the failure of the Manhattan Bank.

Miss Tunnell showed her cousin, Mr. Chapin, of St. Louis, the various departments of the College on Thursday.

Prof. Kellerman had the misfortune to tread on a rusty nail last week, as the result of which he is compelled to use crutches.

President Fairchild's horse is just recovering from an attack of distemper which has made it unfit for use for three weeks past.

Mr. J. E. Killen, representing the well-known seedsmen, J. C. Vaughan, of Chicago, called at the College yesterday on business.

Mrs. Kedzie and Miss Marlatt spend Friday and Saturday in Kansas City witnessing the workings of Mrs. Emma P. Ewing's Cooking School.

Mrs. Hood is enjoying a visit from her mother, Mrs. L. J. Benight, of Terra Haute, Ind., who is on her return home from Oklahoma, where she visited with her son.

A rich treat is in store for the taster whose business it will be to determine the quality of the 110 varieties of strawberries that have been planted in the experimental gardens.

The Chemical Department has in use an extractor, the invention of Professors Faileyer and Willard, which comes nearer meeting all their requirements than any of the extractors in common use.

President Fairchild went to Topeka yesterday to attend the meeting of the State Board of Education at which the proposed new course of study for the Normal Institutes will be decided upon.

The field in the southeast corner of the grounds is being seeded to sweet potatoes, kohlrabi, mangold wurtzels, beets, and radishes,—about four acres in all,—for the purpose of testing their feeding qualities.

General Repairs is in command of a large force on the grounds which is making its presence felt by newly graveled drives and re-seeded lawns, and the general appearance of cleanliness and thrift which follow spring house-cleaning.

Faculty and students are pleased with Mrs. Kedzie's announcement that Monday dinners and Friday lunches are to be continued indefinitely during the Spring Term. This is done to relieve the large classes in dairying, in which all cannot work to advantage.

The following persons will preside over the literary societies during the spring term: Alpha Beta, E. P. Smith; Webster, John Davis; Hamilton, A. F. Cranston; Ionian, Mamie A. Houghton. The other officers of the various Societies may be found in another column.

The friends of E. B. Purcell, Ex-Regent and Treasurer of this College, have learned with sincere regret of the assignment, on Tuesday last, for the benefit of creditors, of his bank. The liabilities amount to \$562,206.53, with assets as yet unenumerated. The immediate cause of the failure was peculiar measures taken by the British Land and Mortgage Company to recover \$20,000, due April first, but secured by abundant collateral in the shape of 5,200 shares of that Company's stock.

The sympathies of the community, even of the multitude who suffer by the failure, are with Mr. Purcell, whose fair dealing and uniformly careful regard for others' interests have caused him to be widely trusted. Several members of the Faculty suffer to a greater or less extent; but not an unkind word has been heard in all the excitement awakened. The other business interests of Mr. Purcell, all incorporated under various firm names, are understood to maintain their business standing intact.

The third division of the Third-year Class appeared in public orations yesterday, as follows: H. B. Gilstrap, "An American Statesman;" May Harmon, "Some Possibilities for the Student on the Farm;" A. A. Gist, "Rousseau and the French Revolution;" Myrtle Harrington, "The Next Duty;" R. C. Hunter, "Annexation of Canada;" Delpha M. Hoop, "The Importance of Memory;" G. V. Johnson, "The Importance of Irrigation to the Arid Region;" Mamie A. Houghton, "Woman as a Pioneer."

The Board of Regents will reorganize for the year's work on the 22nd instant, with Mr. T. P. Moore re-appointed his own successor, and Mr. R. W. Finley, of Decatur County, successor to Mr. Thos. Henshall, of Kansas City, Kansas, who has served as Regent for two terms, five years. Regent Moore, as a cautious and experienced businessman, is needed in the management of the College finances, and his past acquaintance with College needs insures interest and ability. Of Mr. Finley, we learn that he is a successful farmer (and at present Clerk of his County), and of course interested in maintaining the Kansas College at its highest point of efficiency as an aid to agricultural education.

GRADUATES AND FORMER STUDENTS.

A. E. Newman, Fourth-year in 1887-88, has entered College for a special work this term.

Miss Harkins, who took special studies in Household Economy during the winter term, writes from South Dakota Agricultural College that one of her friends thinks of pursuing similar studies here next year.

THOROUGHBRED STOCK FOR SALE.

Owing to overstocking, the Farm Department of the College offers several head of thoroughbred Shorthorns and Jerseys for sale. They are all breeding animals in excellent condition. The Shorthorns are of the well-known Cruikshank family, and among them are three yearling bulls. All the Jerseys are registered in the Jersey Herd Book. For further information, apply to the Professor of Agriculture.

LABOR AND EARNINGS.

Every encouragement is given to habits of daily manual labor during the College course. Only one hour of daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their abilities and means.

All labor at the College is under the direction of the Superintendents of the departments, and offers opportunity for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed.

The shops and offices are opened afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed—outside of required hours of labor—upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates varying with services rendered, from eight to ten cents an hour. The Superintendents strive to adjust their work to the necessities of students, and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay-roll for the past year ranges from \$250 to \$400.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term time, or from other sources, for the larger part of their expenses. The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

INDUSTRIAL TRAINING.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have Farming, Gardening and Fruit-growing, Carpentry, Cabinet-making, Iron-work, Printing, or Telegraphy. Young women may take Sewing, Printing, Telegraphy, Floriculture, or Music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second year and the fall term of the third year, upon the farm, gardens, and orchards. Young women take their industrials for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen, laboratory and dairy.

COLLEGE SOCIETIES.

Scientific Club.—President, O. P. Hood; Vice-President, J. T. Wildard; Secretary, A. A. Mills; Treasurer, Abbie Marlatt; Board of Directors—J. D. Walters, J. F. Morrison, and O. E. Olin. Meets in Chemical Laboratory on the fourth Friday evening of each month.

Young Men's Christian Association.—President, W. H. Sanders; Vice-President, V. O. Armour; Recording Secretary, H. B. Gilstrap; Corresponding Secretary, R. W. Newman; Treasurer, H. Darnell. Meets in Horticultural Hall Sunday afternoon at three o'clock.

Young Women's Christian Association.—President, Christine Corlett; Vice-President, Ora R. Wells; Recording Secretary, Callie Conwell; Corresponding Secretary, Ava Hamill; Treasurer, Sarah Cotrell. Meets Tuesday morning at eight o'clock in Society Hall..

CHEMICAL LABORATORY, March 28th.

The Scientific Club was called to order by Pres. Hood. Minutes of the previous meeting were read and adopted. Miss Marlatt then read a paper, "The Aladdin Cooker." This cooker was invented by Atkinson. Consists of an oven surrounded by a wall of "packing" material. With it, food can be cooked over a common lamp. The inventor claims that there is a great saving of fuel by using this.

Prof. Lantz, "Collection of Birds' Eggs." Many students are now interested in this subject. Do not collect indiscriminately. A collection is very difficult to take care of. When nests are robbed, all the eggs should be taken. The specimens are prepared by making a small hole in the side of the shell and removing the contents with a blowpipe. Many eggs and nests were shown the members of the Club.

Prof. Graham, "The American Indian." Many Indians believe they were created underground or water. Nearly all Indians believe that they were created in the country where they now are. There are many legends among them that they came from the north. Many students claim that the Indians came from Asia, and reached their present place by crossing Behring Straits and thence to the south. This idea is based on similarity of people of the two countries. However, the idea of the migration from Asia is disputed, and certainly needs more proof. Many statistics and facts were given on the Indians of today.

A. A. M.

SOCIETY HALL, April 4th, 1890. At the usual hour President Senn called for order and roll-call. Music, a chorus, by Misses Julia Greene and Maude Parker, and W. W. Hutto. Mr. Hutto took the solo and duet parts. After prayer, Mr. McIlvaine gave an oration on "Legal Crimes." The question, "Should a new society be organized?" was debated. Mr. Thompson said: "We are on duty only twice a term. This is not sufficient training. As we have a great variety of people, we must have a variety of societies, so there may be work for all." Miss Newell thought that with having to write for the *Gleaner* every fourth session, and a chance to speak extemporaneously every other week, besides regular assigned duties, one has quite enough work in the A. B. Society. Better have little, and do it well, than make a pretense at much. Mr. McCord thought that large numbers gave too good an opportunity for lazy people to indulge themselves. Those taking part in the discussion are always the best listeners. Mr. Zimmerman said if the ten or twelve members who make a practice of attending only when on duty would just stay away all the time we could have a better society. We need fewer assignments, and more good workers and listeners. The greater the number the greater the variety of thought presented. Success depends on the kind of work we do, so we must have time to do it well. We are much benefited by trying to hold our own with many strong members. The chiefs argued further in closing. The Judges favored the negative. The *Gleaner*, read by Jennie Greene, contained, besides a very pleasing editorial, the following articles: "A medley of poem titles," written in a laughable manner. "Fines in our Society." This was severe on those who defend law-breakers when the Society is trying to punish them. "Imitations universal." Examples: Many cocks crow when but one makes the start; many dogs bark when a leader gets scared at the moon; nearly all Third-years wear Prince Albert coats on the rostrum when one has set the example. Discussion, "Destroying a theory," followed an organ solo by Christine Corlett. Extemporaneous speaking was then engaged in with lively interest. When the time for election of officers came, the following were chosen: President, E. P. Smith; Vice-President, Nellie McDonald; Recording Secretary, Julia Greene; Corresponding Secretary, Jessie Stearns; Treasurer, Martha Campbell; Marshal, Warren Conner; Critic, B. H. Pound. W. W. Hutto was appointed newsman. After a little parliamentary work, and a song by Misses Senn and Hoop and Messrs. Smith and Hutto, the Society adjourned.

C. L. H.

SOCIETY HALL, April 5th. The Webster Society, after the usual formalities, took up the literary part of the programme. The question for discussion was whether or not we should subsidize our merchant marine. W. L. Morse was the first speaker on the affirmative. In our early history, our marine was in as good condition as that of any country, but, having no support, it was not able to hold its own. The Government soon awoke to the fact that the marine should and must be protected, and thenceforward adopted protective measures. The effect was good in every way, not only on the sea, but also on the land. From the fact that good resulted from aid and protection several years ago, may we not conclude that it would be beneficial now? England has given her shipping such a start that no other nation can successfully compete with her. Her power can be traced directly to the assistance which she receives from the English Government. Our legitimate trade is being taken by the English, and it is our duty to protect ourselves by protecting our marines. Our products are constantly increasing, and were we to subsidize our merchant marine, we could dispose of our produce to a much better advantage. We are for America, and if she can acquire more wealth by the agency of subsidies, it is perfectly right and proper. The object is not to get cheaper rates; they are as low as can be expected now. We would do it if America may get America's share of the commerce of the world. The negative was discussed by H. N. Whitford. The advocates of subsidies are devoid of common sense. They wish to establish on the sea a monopoly greater than those on the land. They would drive out all competition, then raise the prices for transportation, and would have commerce in an unenviable plight. It was not protection which built up our marine industry. It can be traced directly to the Crimean war, while the falling back to the previous stage was caused by our civil war, and not because protection was withheld. France has tried the experiment of subsidizing, and it has been fairly proved to be a failure. Norway has many ships, and much wealth represented in them, but she controls very little of the world's commerce. Mr. Morse was assisted by G. C. Gentles, and Mr. Whitford, by G. K. Thompson. After a discussion by J. Frost on "The Discoverer of America," the Society proceeded to the election of officers for the spring term. The following officers were elected: President, John Davis; Vice-President, W. L. Morse; Recording Secretary, A. A. Gist; Corresponding Secretary, T. E. Wimer; Treasurer, J. A. Davis; Critic, J. N. Bridgeman; Marshal, E. M. S. Curtis.

CAMPBELL.

IONIAN HALL, April 4th. The Ionian Society was opened with Vice-President, Miss Doris Kinney, in the chair. The order of the day began with congregational singing, followed by prayer and roll-call. On account of misunderstanding by many of the members of the postponement of the programme, but four were prepared. The programme opened with an essay, read by Eusebia Mudge. Miss Mudge thinks the question, What should be our national flower? an important one. The *Oracle*, edited by Mary Rhodes, and read by Mary Pierce, contained, among others, the following articles: "The Girls of Today," "The Alphabet," "A Windy Monday," "How a 'Prep' writes a Pun for the *Oracle*." The programme closed by each one of the members favoring the Society with an instrumental solo, excepting those "who could not play without their music." These were formed into a chorus, and rendered a fine selection. Following the programme was the election of the following officers: President, Mamie Houghton; Vice-President, Lottie Short; Recording Secretary, Louise Coburn; Corresponding Secretary, Julie Pearce; Treasurer, Doris Kinney; Critic, Ada Rice; Marshal, Hortensia Harmon; Board of Directors—Fannie Waugh, Mary Pierce, and Eda Hederstrom.

M. E. W.

HAMILTON HALL, April 5th. Because a large amount of unfinished business had to be disposed of, and because this was the night for the election of officers, the programme of the evening was omitted and the assignments carried forward one week. The election of officers passed off quietly, the following men being chosen: President, A. F. Cranston; Vice-President, R. Snyder; Recording Secretary, G. V. Johnson; Corresponding Secretary, H. B. Gilstrap; Treasurer, G. L. Melton; Critic, S. L. Van-Blarcom; Marshal, J. Riddell. After a short Critic's report, the Society adjourned.

WAUGH.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

Maple Hill, Wabaunsee County, has voted bonds for a new school house.

The Dodge College *Advocate* rejoices: "We are in our new building."

A complete set of Johnson's Encyclopedia has been added to the public school library of the Manhattan schools.

Hon. George R. Peck, of Topeka, has consented to deliver the annual address before the literary societies of Washburn College sometime during commencement week.

Prof. Karl Preyer has resigned the professorship of music at Baker University, on account of the protracted illness of his wife. The University loses in him a musical enthusiast whom it will be hard to replace.

The Board of Regents of the State Normal School at Emporia have organized for the ensuing year, by the election of Adolph Hatfield, President; James S. Graybill, Vice-President; H. D. Dickson, Secretary; and W. H. Caldwell, Treasurer.

A charter has been obtained for the Kansas Normal University of Hutchinson. This institution aims to furnish education in the higher branches. Already there are one hundred students, and it is an institution which is growing in importance and interest.

The *College Echoes* prints a cut of the proposed college building of Lane University, a solid and gorgeous-looking structure of limestone range work, with a massive square tower and massive chimneys. It will be the most substantial educational building in Kansas.

The King of Sweden has granted permission for a collection to be taken in all the churches in the kingdom, before August 1st, for the benefit of Bethany College at Lindsborg, Kansas. Hon. C. A. Swenson, President of the College, intends to leave for Sweden in May.—*McPherson Educator*.

The Saline County Teachers met in Gypsum City last Saturday afternoon. The attendance was good. Those from Salina were Prof. Roop, Prof. Thoroman, Supt. Armstrong, Profs. Adams and McHaffie, Messrs. Serrill, and others. The principal topic discussed was the adoption of uniform text-books throughout the county.

Prof. A. S. Olin, Superintendent of the City Schools of Ottawa, has been elected Superintendent of Schools at Kansas City, Kansas. Prof. Olin is a brother of Oscar E. Olin, the Professor of English Language and Literature at the Kansas State Agricultural College, and is well known in the educational circles of the State as an energetic and successful teacher and organizer.

The students of the State University put up a job on one of the Professors recently by getting him mixed up on the roll-call. The name McGinty was surreptitiously added to the list, and the Professor, after calling the name once or twice, innocently inquired if anyone knew where McGinty was. The uproar that followed opened the eyes of the Professor, and he dismissed the class with the remark that he did not suppose that any member of it was bright enough to thus get the best of him.—*Kansas Star*.

In the report of the April meeting of the Meade County Teacher's Association, the *Republican* speaks of the State Superintendent of Schools in the following complimentary terms: "Though not what might be termed a 'spread-eagle orator,' Prof. Winans is a plain, matter-of-fact speaker, and holds the attention of his audience through the substance of his discourse, it requiring careful application to grasp and retain all the facts presented. Of course, his discourse was largely directed to teachers; yet his advice to young men and women, whether teachers or not, was full of good logical common sense. He attended the Association Saturday, and gave the teachers a talk after dinner, which applied directly to their work. We are fully justified, we think, in saying that all teachers who heard his address will return to their work with renewed zeal, feeling that upon them rests a greater responsibility. The impression made upon our people by Prof. Winans is that the head of public instruction in Kansas is fully worthy of the responsibility that rests upon him. He has grown from the common school up through the various

channels to the proud and honorable position he now occupies, and is fully conversant with the schools of Kansas, and fully sympathizes with the teachers in their arduous duties."

A SCHOOL FOR GARDENERS.

In carrying out the wishes of the founder, the late Mr. Shaw, of these gardens, a theoretical and practical knowledge for such young men as may desire to become gardeners is provided for. Six scholarships are to be awarded to young men between the ages of fourteen and twenty years. They will be awarded by examination, and each successful candidate must have a good elementary English education and be of good moral character. The course of instruction begins April, 1890. To help those without means, regular wages are paid each fortnight to the pupils, and plain, comfortable lodgings convenient to the garden are provided. The first year pupils will work the same as regular employees of the garden, at a salary of \$200. The second year will call but for five hours' work of this sort, but there will be studies relating to gardening, \$250 wages this year and \$300 per year thereafter. The third year will have forestry, landscape gardening, surveying, and drainage as part of the studies; the three following years, garden vegetables, legal forms of leases, deeds, etc., vegetable physiology, fungi, including botany of weeds, garden and greenhouse plants, and special gardening. The main idea is not so much a scientific as one fitting a class of practical gardeners.

—*Prairie Farmer*.

POMOLOGY ON PAPER.

A speaker at a recent Boston farmers' meeting referred to a 25-bushel crop of apples from a single tree, and calculated that an acre of 70 trees bearing at the same rate would produce 576 barrels, "which is better than is done by most of the 10-acre orchards. But cut it down to two barrels a tree, and we have 140 barrels per acre, and how many reach that figure? He thought very few." Now, an orchard with 70 trees to the acre would be too much crowded to succeed well. The trees might have sufficient room while young or half-grown, but not when large enough to bear an average of 25 bushels each. Many orchardists, probably a majority of successful ones, set their apple trees 33 feet (two rods) apart, which gives 40 trees to the acre. At 25 bushels to the tree, this would be 333 barrels, if all the trees were equally perfect in form, growth, and productiveness. But there are many other orchardists who prefer a distance of 40 feet, giving only 27 trees to the acre, and affording 227 barrels. But trees are not uniform in growth; the soil in different places may affect the quantity of crop, and a part of the trees would not probably bear nearly the 25 bushels. Cutting down the product "to two barrels to the tree," after rejecting all not free from worms and the punctures of insects, there would be only 80 barrels from the 33-foot orchard, and 54 from 40-foot orchard. This yield would be a safer estimate and would avoid the too common error of giving extravagant paper calculations.—*A Veteran Pomologist, in New York Tribune*.

THE PATENT TAX.

Patents on inventions mean legal power to tax at will for seventeen years "all the traffic will bear." With such legal power, poor human nature cannot resist the temptation to extortion. Have we forgotten the "slip-gate" and "driven-well" patents? invalid patents, both, by prior general use, as at last decided by the Supreme Court; no redress, however, for the vast sums extorted. Isn't something wrong with our patent laws when they can be systematically prostituted to such uses for years, with no redress? Not long ago I paid \$100 for as good a "twine-binder" as ever was made; and the makers lost no money on it. A few years before it sold for almost exactly three times that sum. The inventor should be rewarded, but not exorbitantly. The great laws, materials, and forces of nature which he utilizes are not his property. The patent system of a century ago is in many respects a damage to the civilization of today. It should be wisely revised.—*Country Gentleman*.

The Supreme Court of Massachusetts has decided that a man can't accept a free pass one of whose conditions is that he releases the carrier from all liability in case of accident, and then recover damages of the company in case he is injured. Plaintiff in this case (Quimby vs. Boston & Maine Railroad Company) had obtained judgment

in the lower court for \$6,000. In overruling it, the Supreme Court said: "We are of the opinion that where one accepts as a gratuity a free pass upon a railroad upon the agreement that he will assume all risk of accident which may happen to him, no rule of public policy requires us to declare such contract invalid and without binding force."

EXPENSES.

Tuition is free, and no general fee for incidental or contingent expenses is charged. In a few special departments of instruction, the following payments are made in advance to the Secretary:

In the term of Analytical Chemistry, students pay \$3 for the chemicals and apparatus used in their laboratory practice and analysis.

In the Printing Office, young men, in their first year, pay \$3 a term for office expenses. Advanced students have the use of the office for the work performed during the industrial hours.

In Telegraphy, young men pay \$3 a term for office expenses.

Young women are furnished both Printing and Telegraphy free of expense, these two offices, with the Sewing and Cooking Departments, being provided especially for their industrial training.

Lessons in instrumental music—two a week—are from \$10 to \$15 a term, according to its length; one a week, \$6 to \$8.40. One-half is to be paid to the instructor in charge with the first lesson, the other half at the middle of the term.

The cost of text-books at the book stores is, for the first year, about \$4 a term; for the second year, \$2.75 a term; for the third year, \$7 a term; and for the fourth year, \$5.50 a term.

The expenses for apparatus and tools to each student during the course are as follows: Drawing, \$3.50; microscope for Botany and Entomology, \$1.50; case, pins, etc., for Entomology, \$2.25; rules, in carpentry 25 cents, printing 25 cents. The total expense for these articles during the four years is less than ten dollars.

Board and washing are not furnished by the College. Board, with furnished rooms, can be procured in private families at from \$2.75 to \$4 per week. Some students board themselves at even less cost; and rooms for the purpose can be obtained at a rent of from \$1 to \$3.50 a month. Washing costs from 50c to \$1 a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$1.00 to \$200 a year.

COLLEGE BUSINESS.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. Applications for extension of time on land contracts should be sent to the Secretary of the Board of Regents, at Manhattan.

The *INDUSTRIALIST* may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Kellerman, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study or work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

Applications for Farmers' Institutes should be addressed, as early in the season as possible, to the President.

The Experiment Station should be addressed through the Director.

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FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

MICROSCOPES.—Swingle and Varney's Bookstore is the place to get your Microscopes, Dissecting Glasses, Text-books, and Student's Supplies of all kinds.

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GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good répute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week-day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

THE GERMAN CARP.

BY SECY. I. D. GRAHAM.

FOLLOWING a request from the Department of the Interior for particulars of the experiment in raising German carp, undertaken by the College some years ago, comes a request from a correspondent for information as to where the young fry of this fish can be obtained for stocking purposes. This fish was so generally distributed by the General Government (some having been sent to every county in the United States), and its qualities so thoroughly tested by the people, that it has seemed to us to be esteemed much like that other foreigner, the English sparrow, the less said about which the better. Our correspondent, however, describes deep, clear streams in Southern Kansas

time he can furnish fry of our indigenous fishes that are vastly better than any carp as food fishes.

CROSSED CORN THE SECOND YEAR.

BY PROF. W. A. KELLERMAN.

IN 1888, a number of crosses were made between well-known varieties of Indian corn. From 23 of the ears thus obtained, grains were planted last season (in 1889). According to the record of these crosses, contained in the First Annual Report of the Experiment Station, 14 of them showed no effects of the cross the first year, three exhibited unmistakable evidence, and six of them were doubtful, that is, the effects were not clear enough to be recorded as indisputable.

Last season all these crossed varieties produced ears which, without exception, showed the effect of the crossing. They resemble both the parental types—sometimes the male parent, sometimes the female parent more closely. In no case did they exactly resemble only one of the parents. They were, in short, more or less pronounced intermediates—showing characters of both parents. In some cases, the grains on each ear are quite uniform, though some of the ears resemble one parent and others resemble the other parent more closely. In other cases, the grains were more or less variable in each ear. In the accompanying illustration, five of these crossed varieties (second year) are shown.

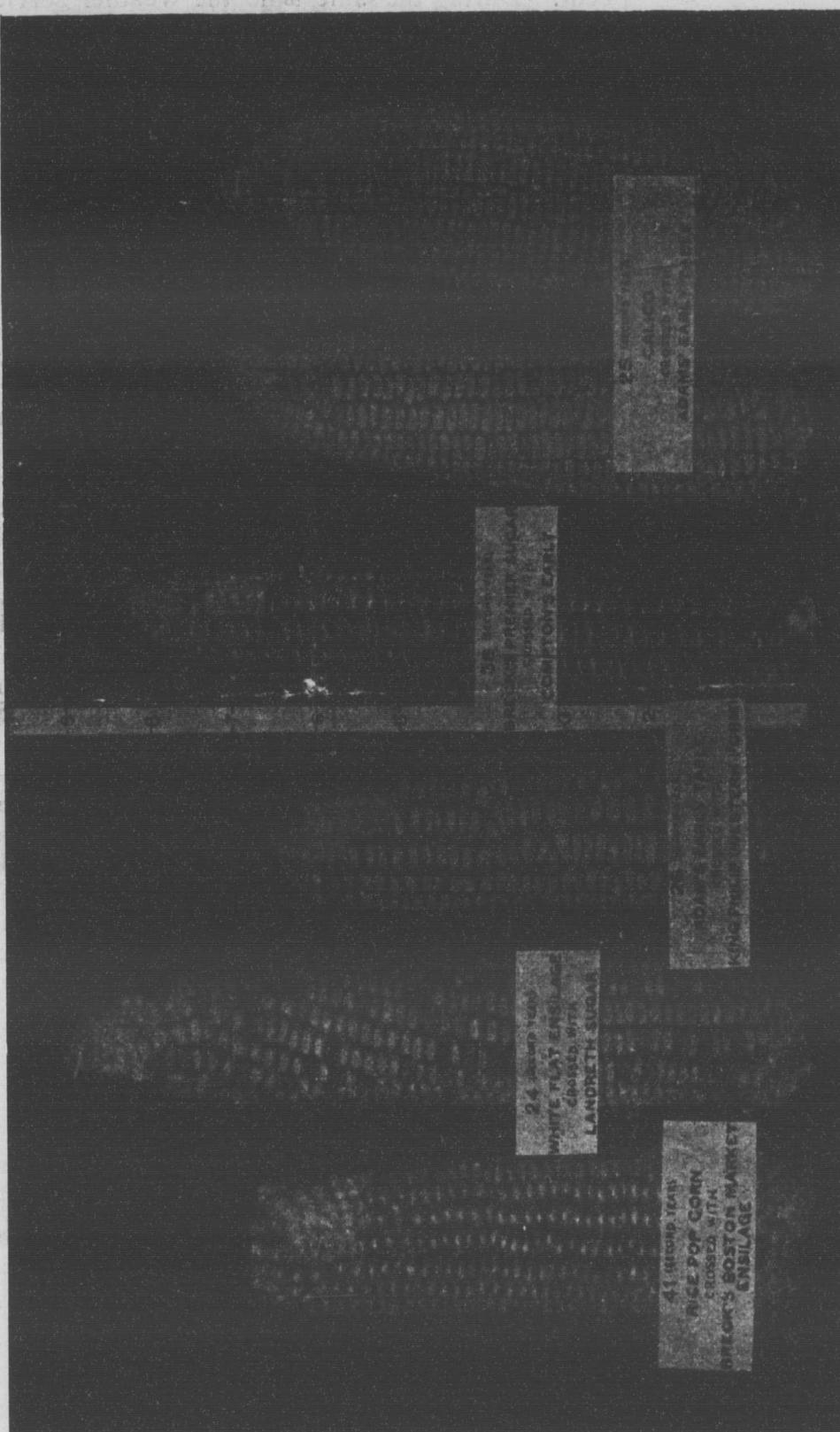
No. 24. White Flat Ensilage, crossed with Landreth Sugar. In this—which scarcely showed the evidence of cross the first year—about one fourth of the grains are sweet corn; the remainder strongly resemble the White Flat Ensilage, but are less indented at the summits.

No. 25. Calico, crossed with Adam's Early Table. No evidence of the cross the first year. Some of the ears approached the male

parent (Adam's Early Table) in being smaller and having smoother kernels, though they show to some extent the characteristic red-striped coloration of the female parent (Calico). Other ears are large, approaching the Calico in size and character of kernels, yet are in color like the Adam's Early Table, white.

No. 29. Adam's Early Table, crossed with the large western form of King Philip. No evidence of cross the first year. The ears are larger than in case of Adam's Early Table, and the grains are tinged with red. The summits of the kernels are whiter than in King Philip. The ears are very uniform and exactly intermediate.

No. 38. Breck's Premier Sugar, crossed with Compton's Early (flint). Effects of the cross visible the first year. Differs from Breck's Premier Sugar in being mostly ($\frac{1}{2}$ of the kernels) yellow flint, and in having, in most cases, a yellowish tinge in the sweet kernels. Strongly resembles the



CROSSED VARIETIES OF CORN—SECOND YEAR.

that are already plentifully stocked with black bass and other superior fish, and asks where to find carp with which to stock them.

In our estimation, it would be a mistake to make this attempt. The streams described are not suited to the carp, which must have shallow, warm, and quiet water for its best development. Nor would it be in accord with our views to stock a pond with carp where the native fishes are so vastly superior as an article of food, and so much better able to take care of themselves than the carp. The carp is valuable as a stagnant-water fish where nothing better lives, and, as such, it can find a home in thousands of ponds and streams in the State; but, in our judgment, it has no place in the streams of Southern Kansas that are already well stocked with the black bass, croppie, perch, and blue catfish. The State Fish Commissioner will furnish carp so far as he can to applicants who will properly take care of them, but at the same

Compton's Early, but shows some typical grains of each parent, also intermediates on one and the same ear.

No. 41. Rice Pop Corn, crossed with Breck's Boston Market Ensilage. The kernels showed the first year no evidence of the cross, except, perhaps in being slightly larger than the Rice Pop Corn. The ears are larger and longer than in typical Rice Pop Corn, the kernels are larger, not pointed at tip, and in section show more starch.

THE FARMERS' CLUB.

BY SECY. I. D. GRAHAM.

THE farmers' club and the farmers' institute are potent factors for good which ought to receive more attention at the hands of those who should be interested than has been the case in the past. Talking and listening at a farmers' club pays better than to do without it. Knowledge can be pooled as well as earnings, and with the result that each member of the pool is better off than before, because he has the advantage of the knowledge of many instead of one. Organizations of this kind which are properly organized and conducted are schools of experience, in which each is at once a teacher and a pupil, and it is a frequently noted occurrence that where such schools prosper the leeches of society thrive but poorly. Not only is wisdom and knowledge acquired by such "combines," but the power of association in commercial relations is gained, and the farmer is better protected against the frauds who are constantly trying to "work" him than he could be alone. The patent-right man and the bogus-note man have little to do with the club farmers.

Much of the good of such an organization may be had, of course, in other organizations that are not formed solely for this purpose, but the education of its members is likely to be but a secondary matter where other objects are announced as the chief ones.

Whencever Kansas does things by halves, she does them by both halves; and it is to be regretted that the remarkable energy which has made the people of this State famous for progress in other lines of educational work should not be found available for such work as this in more localities.

AS TO FEEDS AND FEEDING.

If there is ever to be a great revolution in America in the production of stock, that which is produced for food, we mean, it will come in the form of intelligent feeding. The idea would be more intelligently put if we used the term scientific feeding, but the average farmer and stock raiser dreads that term as savoring of the class room, the laboratory, and the professional teacher. It is nothing more or less than correct practice reduced to a system, and that is just what is wanted in the feeding of our meat animals from birth to block. Two cents a day saved in feeding an animal that is intended to live a year means a gain of \$7.30; one cent a day wasted means a loss of \$3.65 in a year; and it is in the making or the losing of these sums that we get profit or loss. In every department of the *Rural World* we have for years endeavored to make this feeding business a special feature, and are in hopes that we have measurably succeeded in impressing our readers with its importance, and of leading them into more successful practices.—*Colman's Rural World*.

Farmers should study the conditions and demands of their own neighborhood. There may be a market at your very door. I know of small villages where butter, fresh and well made, will bring 30 cents a pound the year round, store butter being simply intolerable, a mass of wretched stuff the storekeepers are obliged to take in trade from poor farmers. Choice pork, fresh eggs, and nicely dressed poultry are always in demand. You complain of the middlemen—be one yourself: hunt for customers.—*Country Gentleman*.

THE WEATHER BUREAU.

The *Popular Science Monthly* offers the following reasons for and against a transfer of the Weather Bureau to the Department of Agriculture:

"Everybody has been noticing that more and more of our official weather predictions turn out wrong, and in the hope of restoring their former efficiency several bills have been introduced into Congress within the last few years for transferring the Weather Service from the War Department to a civil bureau. The reasons for such a change are that military regulations hamper the scientific work of the Bureau, and cause civilians, who have joined the service from aptitude for science, to resign. The abler military men, also, seeing no hope of promotion in the Signal Corps, generally prefer the line. The natural result has been that, as General Greely reports, the service is full of incompetents, and the percentage of successful weather predictions has decreased in the last five or six years from eighty-seven to seventy-six per cent. During the same time the weather service in European countries has been steadily gaining in efficiency.

The objections to the transfer are: First, that military control is claimed to secure superior promptness, accuracy, and continuity of record, which is met by the statement that the European weather services are entirely civilian, and our own depends for some of its data upon observations telegraphed by civilian observers from about twenty points in Canada. Second, it is claimed that only military discipline could keep men in disagreeable or dangerous places; but civilian observers are found to man the Canadian meteorological outposts on Manitoba, and the mountain-peak stations in Europe. Third, it has been urged that the cost of the weather service would be increased by civilian control; but our military weather service costs more than the civilian services of all the governments of Europe put together. The appropriations are now about \$900,000 a year, and some considerable reduction that has been made in the cost during the last few years has been due to the employment of civilian aid. Fourth, it has been urged that the military training of the observers would be of value in case of war; but if this argument is valid, the postal service, and all the other Government departments, should be put under military control. A fifth objection is, that in a civilian bureau the appointments would be controlled by political influence. But with the protection of the civil service rules, it is probable that the bureau would be at least as free from favoritism as the army is. It has been objected that the Government would be breaking its contract with the men of the Signal Corps if they were transferred to a civil bureau."

IT PAYS TO FEED YOUNG.

If properly managed, there is good money in swine-raising. The hog matures more quickly than any other of our domestic animals, enabling the skillful breeder to turn his money oftener and to better advantage than he could with any other stock. Yet, to make money, or at least to make the money he should, he must adopt the best methods; that is, the methods that will make the most pork with the least feed and in the shortest time.

The first point is this—and it is so well known that no one will seriously deny it: a young pig will make more weight of flesh from a bushel of corn than an old one will. Hence, it is true, other things being equal, that the younger a pig can be crowded to a marketable size, the greater the price the feeder will get for his corn, and the greater the per cent he will make on the transaction. The converse is likewise true, that the older the hog, the less weight of flesh he will make from a bushel of corn, and the less the per cent of profit the feeder will make upon the transaction. The fact is, no farmer can afford to pursue any but the best methods, but it is likewise true that not one farmer in ten can tell how much corn it takes to make a hundred pounds of pork on a pig less than nine months old or on a hog one year or more old, or even can tell how much it has cost to raise and fit for market his pen of pigs at any age. It is all hap-hazard, and he does not know whether he is making money or losing it. The farmer that has all these things down to a science and knows what he is doing, and when he does it, is almost always making money, for he has reduced his business to a system,

and does not keep on in any kind of work that does not show a living profit.

In raising pigs for the market these rules may be laid down as absolutely true:—

The younger the pig is crowded to a marketable weight, the greater is the per cent of profit upon the feed consumed. The quicker they are turned into cash, the sooner is given the opportunity to reinvest, and hence the greater the profit from the business part of the transaction, for the banker's secret is simply quick re-investments. The shorter the period from forwarding to market, the less is the danger of loss from disease.

Keep these primary principles in view, and you are far on the way to success.—*The Western Farmer and Stockman*.

THE VALUE OF APPLES FOR FOOD.

Dr. C. D. Smith, of Portland, in a paper on Fruit Dietetics read at the Maine State Pomological Society, said that other fruit may be more luscious, more delicate in flavor, more beautiful to the eye; but the apple surpasses them all; if beautiful, they are transient, while the hardy apple constantly ministers to the demand of our tables and asserts a decided superiority in its comparatively easy production, its variety of flavor, its endurance both fresh, dried and preserved, and in its multiplicity of uses as food. Besides affording a welcome addition to the dessert, apples combine nutriment enough with water and agreeable acids to render their use in the ripe state highly beneficial; their general effect is mildly laxative. Apple water, made by slicing up two good sized apples, in a quart of water, allowing it to simmer and then boil down to a pint, makes a most refreshing and cooling drink for patients suffering from febrile affections. Whether stewed, fried, baked whole, or in pies, or made into jelly, they form a most valuable diet, for by keeping the blood supplied with those acids which are necessary to maintain its vitality, they take the place of green vegetables, at a time when such are difficult to procure, besides being, when thoroughly cooked, more easy of digestion. Many a person who has arisen from long exhausting fevers, when the diet has been reduced to a minimum, or has continued with a wearying sameness for weeks, will always wish that all foods could always taste as rich and satisfying as that dish of baked sweet apples and cream which was the first solid food allowed. I know of nothing, which by judicious preparation, may be made to go so far in the dietary of the sick or well with so little expense as the apple. Very sweet apples are not so useful as those containing a moderate amount of acids, and the fruit, when eaten raw, should be used in moderation; half ripe or green it contains so much vegetable fibre, in place of water or sugar, that even cooked it is inferior. The universal demand for apples is a good proof of their excellence as an article of food, even if their percentage of actual nutriment is low.—*New England Farmer*.

WHERE ARE THE SOLDIERS?

The army is divided into ten regiments of cavalry, five of artillery, and twenty-five of infantry, besides the engineer battalion, signal corps, hospital corps, etc. In the navy, white and black men serve together, but in the army this has not been attempted, and all the colored soldiers are collected into the 9th and 10th cavalry and the 24th and 25th infantry.

Where are all these soldiers? They are scattered along the coasts in the forts built fifty years ago, and equal in their time to anything abroad, and they are stationed along the frontier to discourage borderers, and in the vicinity of Indian reservations by way of assisting the short-memoried Indian to remember that peace and civilization are the best policy for him. The latest report of the distribution of the enlisted men shows that there are 527 of them around the metropolis of the United States, and 405 at the National Capital, or 651, if the garrison at Fortress Monroe be included. There is a school at Fortress Monroe for the training of officers in connection with heavy artillery. There are nearly 900 soldiers around San Francisco. In the State of Nebraska there are over 1,500; in the Territory of Wyoming, over 1,300; in Utah, 700; in the two Dakotas, 1,800; in Montana, 1,900; and along our entire Southern frontier, to guard against Indians, borderers, and smugglers, there are a little more than 5,000 soldiers.—*The Chautauquan*.

CALENDAR.

1889-90.

Fall Term—September 12th to December 20th.
 Winter Term—January 7th to March 28th.
 Spring Term—March 31st to June 11th.
 June 11th, Commencement.

1890-91.

Fall Term—September 11th to December 19th.

TO SCHOOL OFFICERS.

The College Loan Commissioner has funds to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioners and the State Agricultural College. Address Jno. E. Hessian, Loan Commissioner, Manhattan, Kan.

LOCAL MATTERS.

The copy for the Catalogue is almost ready for the printer.

The College house on the hill is for rent at very moderate terms. Address the President.

A request for college publications comes, this week, from the University of Gottingen, Germany.

The prairie hills show the green of springing grass since the refreshing rains of Tuesday and Wednesday. On the College grounds the lawn mower has started its song already.

The College did not observe arbor day with any special ceremonies, only because every fair day from April 1st to 30th is an arbor day, and thousands of trees have been planted this spring in both forest and lawn.

The Printing Department has received from Prof. Brown a copy of "Scansion and Song" a manual for elementary instruction in marching, reading, and singing, for the school and home. Illustrated. By Rev. Robert Brown, A. M.

Prof. Popenoe gave, in the lecture hour yesterday, an interesting account of tropical and semi-tropical fruits found in our markets, showing where, how, and to what profit they are raised, packed, and transported to every part of our land. The especial advantages of Florida and California for raising oranges, raisins, plums, figs, dates, and bananas were concisely presented.

The selection of students to represent the Third-year Class in the exhibition of Commencement week was announced this week as follows: Misses Nellie McDonald, Lillian St. John, and Fannie Waugh; Messrs. A. E. Martin, D. C. McDowell, B. Skinner, F. A. Waugh, and G. W. Wildin. These are selected from the whole number of those whose general standing in the Third-year Class upon the students' record is above ninety per cent, and for proficiency in rhetorical class work for the year.

The Kansas Farmer publishes Prof. Georges' paper before the State Dairy Association, with the following notice in its report of proceedings: "Food for Dairy Stock," by Prof. C. C. Georges, of the State Agricultural College at Manhattan, was the treat of the afternoon. As the Professor is a comparative stranger in our State, the presentation of the subject was looked forward to with considerable interest. To say that those fortunate enough to be present were happily and profitably surprised is stating it mildly. They were unanimous in enthusiastically pronouncing the paper the most valuable ever presented to the dairymen of Kansas upon the subject."

While the friends of Prof. Popenoe and this College are glad to see merit recognized in his selection as successor to W. H. Ragan in the office of Secretary of the American Horticultural Society, all must regret the misfortune which compels the resignation of Mr. Ragan. The following communication from him explains itself:

AMERICAN HORTICULTURAL SOCIETY,
 SECRETARY'S OFFICE, GREENCASTLE, IND.,
 April 15th, 1890.

TO THE EDITOR OF THE INDUSTRIALIST:

Through continued bad health, I have felt compelled, first to decline a re-election to the office of Secretary of A. H. S., and second, and more recently, to resign the unexpired term. Prof. E. A. Popenoe, of Manhattan, Kansas, Secretary elect, and now by appointment, will at once assume the duties of the office, to whom all correspondence should be addressed on and after May 1st prox. Prof. Popenoe, will, by virtue of this arrangement, edit and supervise the publication and distribution of Vol. VI. of the Society's transactions, the same being the proceedings of the recent meeting held in Austin, Texas.

I bespeak for my successor and for the Society I have served so long, and which I love and cherish, the same courteous and cordial treatment, which I have so universally enjoyed. Very respectfully,
 W. H. RAGAN, Secretary.

The following bound volumes have been added to the Library since the report of two weeks ago: North American Review, 1, volumes; Eclectic Magazine, 9 volumes; Electric Review, 4 volumes; Spon's Dictionary of Engineering, 4 volumes; Edinburgh Review, volumes 169, 170; Gardener's Chronicle, volumes 5, 6; The Gardener, volume 36; Consular Reports, volumes 22, 29,

30; Bulletins of United States National Museum, volumes 33, 34, 35, 36, 37; American Architect, volumes 25, 26; Scientific American, volume 6; American Journal of Science, volume 38; Agricultural Science, volumes 2, 3; The Nation, volumes 48, 49; Library Notes, volume 2; Garden and Forest, volume 2; Our Continent, volume 1; Magazine of American History, volume 22; Scribner's Magazine, volume 6; Popular Science Monthly, volumes 34, 35; Harper's Magazine, volume 79; Century Magazine, volume 16; Education, volume 9; Good Housekeeping, volume 8; History of Education in South Carolina, Georgia, and Florida; The Forum, volume 7; The Auk, volume 6; Paper and Press, volume 1; Trade with Spanish America, Curtis; Report Maine Experiment Station, 1888; Report Ohio Experiment Station, 1888; Journal of Comparative Medicine, volume 10; Atlantic Monthly, volume 64; Journal of Military Service Institution, volume 10; Railroad Engineering Magazine, volume 63; Carpenter and Builder, volume 2; Index to Periodicals, 1887-89; Nature, volume 40; Sylloge Fungorum Saccardo, volume 6; The Dairy World, volume 9; Grasses and Forage Plants, Vasey, 1889; Literary World, volume 20; Gazette of the Patent Office, volume 47; Scientific American Supplement, volume 28; Harper's Weekly, 1 volume; The INDUSTRIALIST, volume 14; Watt's Dictionary of Chemistry, 2 volumes; History of University of North Carolina; Congressional Directory, 49th Congress; Alden's Universal Literature, volume 14; Ordnance Report for 1889; Report on Farmers' Institutes, Wisconsin, 1889; California Horticultural Report, 1887-8; Adjutant General's Report, Kansas, 1885-6, 1887-8; Horses, Cattle, Sheep, and Swine, Curtis; General Statutes of Kansas, 2 volumes (loaned). Total volumes in the library, 9775.

GRADUATES AND FORMER STUDENTS.

J. E. Thackrey, Second-year 1887-8, is home from his sojourn in Texas.

W. C. Lee, Second-year in 1885-6, is upon the local staff of the Topeka Capital.

M. M. Lewis, '84, graduated April 17th from the Union Baptist Theological Seminary.

E. M. Fairchild, who graduates in June at Oberlin College, is chosen class-day orator.

H. O. Barnes, student in 1887-8, is attending a business college at Springfield, Illinois.

E. S. Platt, student in 1885, is studying stenography at Pond's Business College in Topeka.

E. M. Platt, student in 1881, is at work in the real estate office of Strickler, Daniels, & Pound, Topeka.

R. E. W. Peck, student in 1887-8, is about to enter the Edison Machine Shops, Schenectady, New York.

J. E. Thackrey, Fourth-year, has been promoted to the Shawnee Agency, I. T., with a salary of \$600.

E. H. Perry, '86, is established as a real estate dealer at Topeka, with an office in the Capital building on Eighth Street.

U. G. Houston, '82, is proved to be the Kansan baptized in the Jordan by Dr. Talmage during his trip through Palestine.

R. B. Forsyth, Second-year in 1886-7, has resigned his place as Postmaster at Liberty, Kansas, and will make his home at Childress, Texas.

Clara A. Short, Second-year in 1888-9, is visiting her sister in College, while on her way home from the State Normal School, where she has spent the past six months.

S. W. Williston, '72, who now holds a place in the Medical Faculty of Yale College, has been elected to the chair of Geology and Palaeontology in the State University.

S. Sisson, student in 1883-84, and afterward for several years the College herdsman, won several prizes in the Toronto Veterinary College, where he has spent the winter, and is now continuing his course with Doctor Orr of Manhattan.

Mrs. Grace R. Strong Lightfoot, Third-year in 1883-4, and Mrs. Evangeline H. Strong Baxter, student in 1885-6, are visiting their parents in Manhattan, expecting to join their husbands, W. J. Lightfoot, '81, and F. Baxter, Second-year in 1885-6, at Logan, Utah, where they expect to make their home.

COLLEGE SOCIETIES.

SOCIETY HALL, April 12th. The Webster Society was called to order by Pres. Stoker, and after roll call S. I. Wilkin led the Society in devotion. The minutes of the previous meeting were then read and adopted. The following officers were then initiated: Jno. Davis, President; W. L. Morse, Vice-President; A. A. Gist, Recording Secretary; T. E. Wimer, Corresponding Secretary; J. N. Bridgeman, Critic; J. A. Davis, Treasurer; E. M. S. Curtis, Marshal. The Society then listened to a valedictory from Ex-President Stoker. Mr. Stoker presented the earnest worker and the Society shirk in striking contrast, and in fitting and appropriate language expressed his thanks to the Society. Spoke of its progress in the past and its prospects for the future. Upon call for inaugural, Jno. Davis responded, and after thanking the Society for the honor conferred, he spoke of our duty to the Society, and of his intention to stand by its constitution and by-laws. The debate, which followed showed preparation on both sides. The question, "Resolved, That the Mormons should be banished from the U. S.," was debated on the affirmative by J. N. Bridgeman and W. W. Robinson; negative, by J. O. Morse and A. Dickens. Mr. Bridgeman, leading the affirmative, spoke of the importance of the question, not because of past influence, but because of future prospects. He showed how the Mormons have resisted the introduction of other religions, and, their of degrading influence upon woman. Something must be done before Utah is admitted as a State. Legislation will not meet the requirements, and education is not applicable. J. O. Morse then opened the discussion on the negative. He stated that he agreed with the affirmative that something must be done, and that soon, but banishment was not the remedy. He spoke of their state of civilization; of their aid to the U. S., and asked to where shall we banish them, people, and how can we recompense them for their loss. We must meet it as we meet all other great questions of today, and that is by reform. W. W. Robinson then followed on the affirmative. He portrayed the massacre at Mountain Meadow with vividness, and concluded that if for nothing else, they should be banished for this. A. Dickens then took up the argument on the negative. He asked where and how should banishment be done, and doubted its constitutionality. He said, "They are citizens as we are, and banishment would be an acknowledged weakness on the part of the U. S. to cope with the trouble." He said it was not desirable, advisable, nor creditable, and that it is not the surgeon who amputates the affected limb, but the physician who heals, that is the benefactor. Mr. Bridgeman then closed the debate on the affirmative, advocating banishment as the only remedy for the existing evil, because it is the only one that is applicable. It is effective and it is final. We have treated with them long enough, and they will not submit. Mr. Morse closed the negative by stating that our civilization is too high to be acknowledged insufficient to meet this evil. He advocated reform and legislation. He spoke of their great wealth, their industrial progress, and the impossibility of removing them without bloodshed. Our duty is to solve this question and solve it now, with honor to our nation, and with respect for the welfare of our fellowmen. The Society decided in favor of the negative. The Society then listened to a declamation by J. E. Dorman. Mr. Kessler's essay on "The benefits to be derived from Society work" was appreciated by all earnest workers. He showed the benefit to be derived from debate, essay, and declamation, aside from parliamentary drill. A. E. Campbell's declamation came next, on "The Right way and the wrong." The Webster Reporter was then presented by C. A. Campbell. It contained wit and wisdom for all. The quartette being only partly represented, Mr. Sanders favored the Society with a song, "I haven't for a long time now." E. F. Pfuetze then presented the subject of "Railroad Engineering" in an interesting and instructive discussion, following which E. C. Pfuetze favored us with the news of the week. WIMER.

HAMILTON HALL, April 12th. The officers elected at the last session were installed, and the retiring President was called upon for a valedictory. In responding, Mr. Van Blarcom reviewed briefly the work of the past term, and noted the progress made. After a short address by President Cranston, W. E. Smith was initiated, and the programme of the evening was taken up. The first debater was L. S. Strickler. He thought a universal prevalence of republicanism would be desirable. It is the natural form of government, for even among savages the king is chosen by a popular vote. The stimulus which such a form gives to inventions and reforms is shown by the progress in our own country. The oppression of the people in such monarchies as Russia shows the need of republican rule. Corruption exists, of course, in a republic, but it exists in a form more common in a monarchy, and one which cannot be eliminated from political life. S. Van Blarcom thought that republics would not be desirable in all cases. To be successful, a republic must be the result of growth, and the process of educating the people to the nature of a republic and preparing them for citizenship is a slow one. In support of the affirmative, R. W. Newman spoke of the progress in Brazil since it became a republic. In nearly all monarchies, the advantages of republicanism are recognized, and a republic is desired. E. C. Coburn said that in our own country there was an aristocracy nearly as powerful as in a monarchy. When the power rests with a few men, bribery is less likely to affect justice. In our government, the officers are chosen so often that a large part of their time is spent in learning the duties of the offices. The most efficient department is the judicial department, where the justices are appointed for life. In a monarchy, this advantage would be extended to all departments. The Judges decided unanimously in favor of the negative. Percy Leland read an essay on "The Habits of the Waterfowl." I. B. Parker's essay told of a sure, though rather a complicated, cure for love. Next was an oration by A. D. Rice. He discussed some of the dangers which arise from foreign immigration, and the universal desire for wealth. Music, a song, by Messrs. Campbell, Smith, and Smith, F. W. Ayer's discussion was on Soldiers' Homes. F. A. Waugh talked about analytical geometry, and illustrated its advantages by a number of simple problems. After listening to the news of the week from F. A. Campbell, the Society spent some time under the various orders of business, and adjourned at 10:30 P. M. GILSTRAP.

SOCIETY HALL, April 11th. The Ionian Society was called to order by Pres. Pearce. After singing "Beautiful Valley of Eden," the members united in repeating the Lord's Prayer. The Secretary then called the roll, and the regular work of the session began. Miss Ida McConnell's name having been proposed to the Society for membership, she was formally elected and initiated. The Marshal then proceeded to install the new officers. The old corps of workers gracefully "stepped down and out," as it were, and the new officers entered upon their work for the Spring Term with the spirit and energy which promise well. The programme was opened with instrumental music, an organ solo, by Miss Mudge. A humorous recitation, "A Little Girl's View of Life," was well delivered by Miss Frazier. An interesting essay, entitled "Haying," was read by Miss Waugh. After giving the events of a pleasant day in the summer in the country in haying time, the reader gave an instructive description of the different implements used in hay-making, and closed by giving some of her own experiences in that line. The Society was then entertained by a vocal duet, beautifully rendered by Miss Hederstrom and Vail, accompanied on the organ by Miss Selby. Miss Frost then read the Oracle, the motto being, "Laugh, and the world laughs with you; weep, and you weep alone." The editorial was an article on "Court Fools," followed by a poem, a parody, and an article entitled, "The Story of an Engagement Ring." The paper was finished by a rhyme concerning the cooking class, carrying the suggestive title, "Mrs. Kedzie's gone." On account of a special session to be held later in the day, the debate was postponed one week, and the programme closed with a round, "Chicago's Burning," well rendered by the Ionian quartette. After the usual round of business, the Society adjourned. P. J.

SOCIETY HALL, April 11th. The Alpha Beta Society opened with music, a solo by W. W. Hudo; Maud Parker, organist. Devotion. Roll-call, after which the following officers were installed: President, E. P. Smith; Vice-president, Nellie McDonald; Recording Secretary, Julia Greene; Corresponding Secretary, Jessie Stearns; Treasurer, Martha Campbell; Marshal, W. W. Conner; Critic, B. H. Pound. After brief and impressive speeches of farewell and greeting by the outgoing and incoming Presidents, the Society resumed its usual order of business. The first on the programme was an essay by Jeanetta Zimmerman, followed by a select reading by Emma Secrest. The question debated was, "Resolved, That Congress should have but one house." The speakers on the affirmative were Misses Corlett and Parker; on the negative, Misses St John and Thackrey. The Judges, Messrs. Dorman, Davis, and Thayer, decided in favor of the negative. The Gleaner was presented by J. N. Harner. Recess for five minutes. The Society reopened with music. Report of newsman. Informal speeches; Mr. Odie spoke on the Indian question, Martha Cottrell spoke of the evils of chewing gum, and Martha Campbell took for her subject, "Our Society." These speeches called forth lively and interesting discussion by many of the members. Mr. Thackrey, a former member, addressed the house for a few minutes. As there was no unfinished business before the house, we passed on to new business. J. M. S.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

Washburn College believes it will be able to finish the new chapel before commencement.

The next meeting of the Wabaunsee County Teachers will be held at Eskridge on May 9th.

There are eighty more pupils in attendance at the public schools of Holton than there were in March of last year.

From the present outlook over \$400 will be raised in the University for the purpose of putting the athletic field in condition.

The returns from the school-board election of nearly all parts of the State show a general decrease of the woman vote. But few cities or districts have elected female boards or board members.

The papers report a brutal attack upon Miss Myrtle Hill, teacher of a country school near Ellsworth, on April 14th, by one white and two negro tramps, who robbed her of her finger rings and ear rings, and beat her to insensibility. The attack was made at the school house in the morning before the arrival of the children.

Mr. W. H. Brown, a graduate of the State University, now assistant in the Smithsonian Institute at Washington, D. C., who recently sailed with the United States Eclipse expedition for the western coast of Africa, is now at Cape Town. He has been granted leave by Prof. Todd to return when he pleases. The steamship Pensacola, with the rest of the expedition, has returned to this country.

Through the efforts of Captain Schmidt, of the Soldiers' Home at Leavenworth, that institution has been provided with a German library. The books are voluntary contributions from all parts of the State. Of the 2,100 volumes 1,341 were in good condition and are already serving their purpose among the nearly one thousand German veterans, two are in the bindery, and about 600 are waiting for funds to receive a new dressing up.

Kansas City, Kansas, has raised \$106 by voluntary contributions for the purpose of providing the public school buildings with the stars and stripes. We endorse this method strongly. It is not wise for a town to pay for a flag out of its school treasury when the funds are insufficient to provide for an eight-months' school, and to procure the necessary wall maps, dictionaries, and apparatus. Such an exhibition of patriotism is simply foolishness.

The attendance at the Kansas School Principals Association which met in Lawrence on April 5th, was fair, and the work very satisfactory. Superintendent W. R. Stephenson, of Wichita, read a paper on "What should the public school be and what should it do?" Principal H. R. Larimer of Topeka, read a paper on "Development of inspiration to higher education in secondary schools." Principal George G. Ryan, of Leavenworth, read a paper on "The advantage of a Latin-English course preparatory to the university."

The Board of Regents of the State University this week have elected Prof. Frank H. Snow Chancellor of that institution. With the *University Courier* we say that "a very vexing and serious question has been settled with rare sense and judgment. All unite in commanding the wisdom of the choice. Kansas is glad to honor a man who has devoted twenty-four years in faithful labor to her progress and enlightenment. With the inauguration of Prof. Snow, there will return to the University that confidence and security which accompanies superior leadership."

The election of Prof. Francis H. Snow as Chancellor of the State University has made necessary the addition of another Professor to the Department of Natural History, the Dean of which Prof. Snow will remain. The choice fell upon S. W. Williston, Professor of Anatomy at Yale College, who is a graduate of the Kansas State Agricultural College, a former citizen of Manhattan, and a pupil of Prof. Benjamin B. Mudge, whom he accompanied on his annual vacation trips all over the western part of the United States for several years. Prof. Williston is also the author of several scientific works on different branches of Natural History.

The long-talked-of race question in the public schools of Olathe, which has been in the District Court since last October, was settled by Judge Burris, who decided that under the laws of the

State of Kansas, Boards of Education in cities of the second class have no authority to establish or maintain separate schools for white and colored children. This decision is in keeping with the decision of the Supreme Court in the celebrated case of Tinnon vs. the Board of the City of Ottawa, reported in the twenty-sixth Kansas. Last summer the city of Olathe built two ward school houses, and the colored parents applied to have their children admitted thereto. But they were refused, and a test case was made by applying for a writ of mandamus to compel the admission and instruction of Luella Johnson, a colored child nine years old. After various hitches, the peremptory writ was granted.

MEANS OF ILLUSTRATION.

Agriculture.—Two farms of 215 and 100 acres, for the most part surrounded by durable stone walls, subdivided into fields of variable size to suit the system of management.

A large variety of standard grains and forage crops in cultivation in fields and experimental plots.

A barn 50 by 75 feet, expressly arranged for experimental uses; and connected with it a general-purpose barn, 48 by 96 feet, for grain, hay, horses, and cattle. Both buildings are of stone, and are provided with steam power, and equipped with improved machinery for shelling, grinding, threshing, cutting for the silo, and steaming.

Two piggeries, one of ten pens for experimental uses, and one of six pens, with separate yards, for general purposes.

An implement house 22 by 50 feet, of two stories, and corn-cribs, Shorthorn, Aberdeen-Angus, Hereford, and Jersey cattle; Berkshire and Poland-China swine.

Farm implements of improved patterns.

Collections of grains, grasses, and forage plants.

Buildings, stock, and equipments are valued at \$25,000.

Horticulture and Entomology.—Orchards containing 275 varieties of apples, 50 of peaches, 50 of pears, 16 of plums, 20 of cherries, and 10 of apricots.

Small-fruit garden, with 200 varieties of small fruit, including blackberries, raspberries, gooseberries, currants, and strawberries; and vineyard, with 75 varieties of grapes.

Forest plantation of twelve acres, containing twenty varieties of trees, from ten to fifteen years' growth.

Ornamental grounds, set with a variety of evergreens and deciduous trees. Sample rows, containing about 150 varieties of ornamental and useful shrubs and trees, labeled.

Vegetable garden, with hot-beds and cold-frames and experimental beds. Practice rows for students' budding, grafting, cultivating, and pruning.

Two well-planned and furnished greenhouses of three rooms each, stocked with a collection of native and exotic plants.

Museum, containing a collection of woods from American forests, and a large series of specimens in economic and general entomology.

Value of property, exclusive of orchards and grounds, \$11,500.

Chemistry and Mineralogy.—Eight rooms, fitted with tables and apparatus for a class of eighty students in qualitative analysis, sixteen in quantitative analysis, including necessary facilities for assaying, with a mineralogical collection and general illustrative apparatus. Value, exclusive of building, \$7,500.

Botany.—A general herbarium, consisting of a large collection of plants of the United States and other countries; a Kansas herbarium, containing specimens illustrating the distribution and variation of plants throughout the State; also twenty-one compound microscopes, three dissecting microscopes, tools, reagents, wall-charts, etc. Valued at \$2,500.

Geology, Zoology, and Veterinary Science.—A general museum well fitted with cases containing valuable collections of mounted Kansas mammals and birds, with mounted skeletons of wild and domestic animals. The largest collection of Kansas fishes and molluscs in the State. Kansas reptiles and batrachians, salt-water fishes and invertebrates in alcohol. Collections of Mound-builders' and Indian relics, Kansas fossils and rocks, typical of the geological ages found in the State.

In Veterinary Science: A laboratory fitted with apparatus and reagents, for the study of disease. A collection of charts, models, and anatomical preparations, illustrating healthy and diseased structure. Value, \$4,500.

Drawing.—Models, plaster-casts, patterns, charts, easels, and implements. Valued at \$1,400.

Physics.—Physical apparatus, meteorological instruments, etc. Edelman's dynamo electric machine, with numerous accessories, sring psychrometer, and anemometer. The value of the whole is \$2,000.

Mathematics and Surveying.—Transits, compasses, levels, chains, models, etc. Valued at \$1,000.

Mechanics and Engineering.—Carpenter shop, with separate benches and tools for forty-five students in each class, besides lathes, mortising machine, circular saws, band saws, planer, friezer, boring machine, grinder, and general chest of tools for fine work. Power furnished by a ten-horse-power Atlas engine.

Shop for iron work, with forges, vises, drills, etc. Testing machine, charts, and models.

Inventory of material and apparatus in both shops, \$5,800.

Kitchen Laboratory, with ranges, cooking utensils, dining-room furnishings, dairy furniture; valued at \$600.

Printing.—Office, with thirty pairs of cases, large fonts of six point, eight-point, ten-point, and eleven-point Roman type; a good assortment of job type and brass rule; Babcock cylinder press with steam power, a Gordon job press; a mitering machine, a rule curving machine, and a paper cutter. Value of equipment, \$3,500.

Telegraphy.—Office, with five miles of line, connecting twenty branch offices, and as many instruments. Inventory, \$1,000.

Sewing Rooms, with six machines, models, patterns, and cases; worth \$500.

Musical Rooms, with four pianos, four organs, and other instruments; valued at \$1,500.

A Library, carefully selected and catalogued, containing over 9,000 bound volumes, and 2,500 pamphlets. A reading-room is maintained in connection with the library, where may be found on file forty-five of the leading literary, scientific, technical, and agricultural periodicals, and several hundred newspapers, including the principal daily and county papers from all parts of the State. Value of library, \$15,000.

Armory, containing one hundred and fifty stands of arms (breech-loading cadet rifles, caliber .45), with accoutrements; two three-inch rifled guns; also swords, uniforms, etc. Value, exclusive of arms, \$800.

EXPENSES.

Tuition is free, and no general fee for incidental or contingent expenses is charged. In a few special departments of instruction, the following payments are made in advance to the Secretary:

In the term of Analytical Chemistry, students pay \$3 for the chemicals and apparatus used in their laboratory practice and analysis.

In the Printing Office, young men, in their first year, pay \$3 a term for office expenses. Advanced students have the use of the office for the work performed during the industrial hours.

In Telegraphy, young men pay \$3 a term for office expenses.

Young women are furnished both Printing and Telegraphy free of expense, these two offices, with the Sewing and Cooking Departments, being provided especially for their industrial training.

Lessons in instrumental music—two a week—are from \$10 to \$15 a term, according to its length; one a week, \$6 to \$8.40. One-half is to be paid to the instructor in charge with the first lesson, the other half at the middle of the term.

The cost of text-books at the book-stores is, for the first year, about \$4 a term; for the second year, \$2.75 a term; for the third year, \$7 a term; and for the fourth year, \$5.50 a term.

The expenses for apparatus and tools to each student during the course are as follows: Drawing, \$3.50; microscope for Botany and Entomology, \$1.50; case, pins, etc., for Entomology, \$2.25; rules, in carpentry 25 cents, printing 25 cents. The total expense for these articles during the four years is less than ten dollars.

Board and washing are not furnished by the College. Board, with furnished rooms, can be procured in private families at from \$2.75 to \$4 per week. Some students board themselves at even less cost; and rooms for the purpose can be obtained at a rent of from \$1 to \$3.50 a month. Washing costs from 50c. to \$1 a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$100 to \$200 a year.

LABOR AND EARNINGS.

Every encouragement is given to habits of daily manual labor during the College course. Only one hour of daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their abilities and means.

All labor at the College is under the direction of the Superintendents of the departments, and offers opportunity for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed.

The shops and offices are opened afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed—outside of required hours of labor—upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates varying with services rendered, from eight to ten cents an hour. The Superintendents strive to adjust their work to the necessities of students, and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay-roll for the past year ranges from \$250 to \$400.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term-time, or from other sources, for the larger part of their expenses. The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

MANHATTAN ADVERTISEMENTS.

R. ALLINGHAM, dealer in Fresh and Salt Meats. Special attention to student trade. Goods delivered free.

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FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

MICROSCOPES.—Swingle and Varney's Bookstore is the place to get your Microscopes, Dissecting Glasses, Text-books, and Student Supplies of all kinds.

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GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 p. m., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

DISCIPLINE.

BY PROF. A. B. BROWN.

A ROUND and beneath all our wonderful growth and prospects in the direction of increase of population and material wealth, more profound and absorbing than any mere question of abstract science, is the question of discipline,—individual self-control,—and thereby the control of others as individuals or organizations by the individual.

By genius and culture of the individual, by combinations of the individuals of society, in trusts and combines, as by the discoveries of new principles in science and mechanical applications of the same, power is being generated, but power, like knowledge, may be a good or a bad thing, controlled and controllable, a servant desirable and useful; uncontrolled and uncontrollable, a master to be dreaded as a tyrant; so that the question not in any way secondary to that of the generation of power, is the question of governing and regulating that power.

Not more eminent is the genius who first discovered the application of steam as a mechanical agent, than is that genius who discovered the governor of the same. By it, the energies of nature, wind and flood, steam and gas, and electricity, that most subtle and potent of all agents, may be tamed and guided, become helpful and harmless.

Thus harnessed, the earth's surface is ploughed; its harvests are cut, threshed, and ground; its strata pierced, and mountains tunnelled, revealing to the light the hidden wealth of gold and silver and coal; its forests and mountains cut down, and divided into parts, fitted for the erection of cottage, mansion, and temple; weaving and combining the numberless textile fabrics into the countless articles of dress and drapery; reducing the expenses and increasing the conveniences of life to such a degree that the poor man lives and journeys as the richest could not have done, and as kings and emperors did not, a century ago.

But these agents, so docile now, wearing the harness of labor so patiently, and releasing man from the drudgery of toil, and bearing him, swift winged, from shore to shore, and from climate to climate, were known a century ago only as powers uncontrolled and uncontrollable, ready to sweep with desolation the sea and the land, or manifest the anger of Jove by bringing swift and terrible death to its victim.

Thus far, physical forces; but there are higher forces, even those which have caught and harnessed these—the forces of mind and spirit. Where are these generated? and how shall they be controlled?

The spirit of universal education, under the ægis of civil and religious liberty, has made every home; school, and college a laboratory for the generation of power, while the machinery of government, its organizations,—civil and military, social, religious, municipal, and national, are the plants, serving for its application and distribution to the needs of mankind.

But what of the governing principle? Has that developed equally with the increased potency of these higher powers? Is individual self-control, individual and organic recognition of authority, commensurate with the demands of the increase of intelligence and the progress of civilization? Is there such a spirit of loyalty in the home, in the school, and in the college as shall diffuse itself as a healthy, controlling, and governing principle in the social, municipal, and national organizations of society?

If we read aright the records of crime, we fear not. If we note the increase of the dude and the tramp in high and low society, we fear not. If we listen to the reports of authority concerning the

condition of the army, where the desertions almost equal the enlistments, we fear not.

"Knowledge comes, but wisdom lingers." There has been the great eagerness for knowledge, irrespective of the uses thereof; that has been most valued which will most surely and most quickly bring returns in money, irrespective of the growth of character; the seen has been sought, while the unseen is neglected; the arts and the sciences pertaining to gross matter are considered the *sine qua non* of an education, while those that pertain to self-control, self-sacrifice for the good of others, have been neglected or ignored.

Without these higher thoughts, the true, the beautiful and the good, thoughts pertaining to God, to soul, and to immortality, there can be no sufficient culture of character to constitute a controlling and governing power, amidst this ever-increasing whirl of physical forces.

A halt must be called to the spirit of gratification; higher motives than self-indulgence, exemption from labor, bodily ease or pain, must be presented as motives for action. Each muscle of body and faculty of mind must be trained to obey the slightest volition of will, be the consequences pain or pleasure, loss or gain, honor or dishonor.

As Christ, the individual must stand forth, when the tempter comes commanding stones to be made bread, the glory of the world to be possessed, dangers encountered with impunity, with the answer, "Get thee behind me, Satan; for it is written, Thou shalt worship the Lord thy God, and him only shalt thou serve."

This quality of soul may be acquired as Christ acquired it, at the carpenter's bench at Nazareth, watching and fasting amid the grandeur and solitude of the wilderness, living with the mysterious God in silence. Thus only are prophets made, and the wisdom and the word of prophets alone can save; only thus can character be developed that shall scintillate as the diamond of the mine in the darkness and filth of the slums and alleys of the dregs of society; only thus are men made, who, like John, stand in Herod's voluptuous courts, the prophet of the desert still, and unseduced by blandishments from his high loyalty.

The individuals thus developed, combined into masses under the potent sway of right discipline, all the increased generation of power, shall be saved for the increased amelioration of society.

We have passed the barbaric line, as to the means of securing obedience to law, the propriety of conduct. The stake, the rack, and the thumb screw, instruments of torture for the body, are no longer deemed means of grace for the good of the soul, nor the ball and chain, stock, and gallows the instrumentalities most potential in the reformation of criminals and the protection of society.

A higher and better discipline of the individual is secured by recognizing the higher and better elements in human nature, the true, the beautiful, and the good,—influences which mold and guide as surely as man has mind and spirit.

No discipline worthy of the name can come to either spirit, mind, or body but through daily and yearly and life-long endeavor, and is it not best it is so? for endeavor here is life and safety, and yonder, in the presence of Him who weighs the motives of action, endeavor is the measure of character, and brings, not less than achievement, the highest reward.

COMPANY.

BY MRS. N. S. KEDZIE.

ONE of the dreads of a house-keeper is "company." Having company of any kind is more or less of a burden, and whether the company is truly welcome from the heart of the hos-

tess, depends on whether the pleasure of seeing the visitor outweighs the extra work and thought which the addition to the household entails. While there is much difference in the guests which a hostess may have, there is very much difference in housekeepers in the amount of pleasure they will take from the visit of a friend. The woman who allows her visitor to slip at once into the position of a favored member of the family; who really exacts nothing, but allows all the home privileges accorded to one who is truly at home, will find, in most cases, a visitor who is anxious to be in truth a help and a comfort in every way possible. While this is especially true of visitors who stay some days, it is also, in a great measure, true of every guest entertained in the house. No one can live well his life, and live to himself alone. No family can make the best home possible and not mingle more or less with neighbors. And as in olden times men were friends only after they had broken bread together, or had partaken of the same salt, so now friendships are strengthened by little visits; and those visits, if they extend over a meal time, when slight refreshments may be offered, are of much more value as promoters of genuine, hearty good-fellowship than if they are simply formal calls. It is not the kind or quality of the food, but it is the mere having something to eat; because when the subject of food is approached, it finds all upon a level, and while all may not exactly and fully agree upon any topic of conversation, all must eat, all like to eat, and all enjoy having something good to eat.

One reason why company, while it may be thoroughly enjoyed by the hostess, is often dreaded a little as well, is because she tries to do too much. The feeling of having the best foot foremost in case of company grows to an alarming extent, and frequently a house-mother feels, if she tries to have a little company, that she must make elaborate preparations, when, in truth, very slight refreshments would be quite as acceptable. Few kinds of food, and a little of a kind, will give the needed encouragement to conversation; and a small company of people will easily entertain themselves with very little help.

It is good for people to visit, and good for them to entertain. Nothing rubs down the sharp corners, smooths off the rough edges of character, like friendly intercourse with neighbors. It sweetens character, makes everybody more charitable, more kindly in thought and speech, and gives the world around a much brighter aspect. There is, of course, great danger in too much company or too much visiting, for it may grow to absorb the time that should be given to honest work. When, instead of being used as a recreation, it becomes one's chief employment, its usefulness is gone, and it becomes a detriment to earnest living. An excess of any good may become an evil.

One of the duties a good house-mother owes herself is to go abroad occasionally: even a half day or an evening spent at a friend's house will brighten her up for many weeks, and make her a better worker than before.

Children enjoy entertaining their friends; and I believe the majority of women like to have them as company in spite of the extra work. A child who feels at liberty to invite his childish company to his home is always proud of that home, and of the mother who enjoys entertaining her children's friends.

Having company is one of the pleasures of living; and to be fully enjoyed, it must be put in its proper place as one of the recreations of life.

The man who can and will run a private dairy properly can make better butter than a creamery can, because he has control not only of the milk in all its stages, but he has control of the cow and her feed before the milk is drawn; but there are so many men who can't or won't run a private dairy properly that there is plenty of room for the creamery, and it should be rated among the blessings of this nineteenth century.—*Western Farmer and Stockman*.

FOOD FOR DAIRY COWS.

Extracts from a paper presented by Prof. C. C. Georgeson before the State Dairymen's Association, as published in the *Kansas Farmer*:

"The time is past when the dairyman can make a profit without bestowing thought and care on the food of his stock. Increasing competition and decreasing prices go hand in hand. To meet them, the dairyman must take advantage of the general fund of knowledge which has been accumulated by experience and by scientific investigation. This knowledge teaches, as the first essential in the dairy business, that it will not pay to feed a poor cow. The improved dairy cow should everywhere be substituted for the common scrub.

"Secondly, it teaches that whatever may be the character of the cow, good or poor, the product, and therefore also the profit, must be gauged by the food she eats. Poor feed in a poor cow is a poor investment all around. Good feed in a good cow is the only combination of conditions from which a good profit can be realized.

"The most economical feed is that which so maintains the flow of milk as to allow a good profit after its cost of purchase or production has been deducted. A cheap feed is often the dearest in the end. The experienced dairyman can always draw pretty correct conclusions as to what is best suited to his case as far as price is concerned. The foods rich in albuminoids generally cost the most money, as linseed cake, cotton-seed cake, malt sprouts, bean meal. Nevertheless a small amount of one or other of these or similar substances should be given cows in milk along with the coarser feed. Corn meal is not sufficiently rich in albuminoids to make the best feed for milch cows. When it forms the only grain feed, the cow must eat much more of it to produce milk than is required when judiciously mixed with richer foods.

"Young grass, as it is for about three or four weeks after the cattle are put on pasture in spring, contains the nutrients in the right proportion for milk production, and is easily digested, hence the reason that they always do so well when first put on grass. Young alfalfa even has a ratio of 1:2.8 too narrow for milk, and cows on it would profit by a little corn meal twice a day to widen the ratio. As the grass grows older, it rapidly changes. It becomes more woody and less digestible, and by the end of May most dairy cows on grass will profit by an addition of a couple of pounds of linseed or similar meal daily. As regards the winter feed, I think that under ordinary circumstances good ensilage, supplemented by some grain feed, bran, or millstuff, and a little oil meal, if possible, is about as economical and satisfactory a feed as the dairyman can get. This brings me to mention the fact that wheat bran is more digestible when fed dry than when given either as a mash or when cooked.

"When you have the right kind of cow, and give it the right kind of food, there is still a third point to be noted, and that is to make her eat as much of it as possible. It takes a certain quantity of feed to keep the animal machinery in running order. Now, the cow looks out first for herself, and second for the dairyman. His profits must come from the surplus she eats over and above what is required to run the machine, and the greater that surplus, the greater are his profits. It is, therefore, essential to make the feed as tempting and palatable as possible. Give her variety, and season it to her taste. The success of ensilage as a feed, I think, is largely due to the fact that, being green and succulent, it is pleasant to the taste, and she eats more of it in proportion than she does dry fodder. Beets, mangels, kohlrabi, and other roots are not very nutritious, but they are palatable; they sharpen the appetite and make her eat more than she otherwise would, hence they have first a direct influence on the flow of milk in the nutrition they furnish, and second an indirect influence in that they cause her to eat more of other nutritious foods.

Seventeen years ago in Nebraska and Kansas the price of corn was the same as it was a month ago. It was burnt by farmers all over those States, and thousands of bushels went to waste on the ground. Sixteen years ago the farmers were buying corn at seventy-five cents and one dollar a bushel. While there is little probability that such a bound in prices will occur in the next twelve months, the experience should not be entirely wasted. Corn will probably advance further and be much higher.—*Kansas Financier*.

KANSAS THRIFT.

Will Lynch will try four or five acres of cotton, this year, on his Otter creek farm, and so will Peter Dickinson, on his farm at Lowe. Joe Wineingar, south of Hewins, took seed home, this week, and will try three acres.—*Cedarvale Star*.

Mayor Allbright, of Winfield, proposes to experiment in tobacco-raising in Kansas this year. He has 20,000 young plants ready to set out, and in order to protect them somewhat from the wind, will set them in a cornfield where the stalks are still standing.

Fruit men in this vicinity say the prospects for an abundant crop of pears were never better than now. Peach buds have also stood the past winter remarkably well, and there will be a fair crop, with ordinary conditions from now on.—*Baxter Springs News*.

From the amount of oats and flax being sown this spring, we would rather draw the conclusion that Anderson County farmers are not going to rely wholly upon corn as they did last year. Flax is one of the best crops to bring ready cash.—*Garnett Republican*.

Hon. William Fryhofer, one of Riley County's best farmer citizens, declares that there has never before been a time in the history of the country when the people of his neighborhood have been in such generally comfortable circumstances as now.—*Manhattan Nationalist*.

A colored farmer in Cowley County will put out an acre of tobacco this season and six acres of cotton. He says that a soil and climate that will grow watermelons will grow cotton and tobacco; and if that is true, Kansas ought to never buy another yard of calico or muslin or another spool of thread.—*Kansas City Star*.

A. D. Berry, one of the prosperous Havana farmers, recently sold a bunch of cattle, and the corn fed to them paid him thirty-five cents, and he has a lot of hogs which buyers want at advancing prices. Abe says that men who feed all the corn they can grow and buy more, are the ones who are making the money.—*Independence Tribune*.

Kansas leads every State in the Union in condition of winter wheat, as reported in the *Farmer's Review* (Chicago) under date of April 15th. Witness the following: "We summarize the reports of our correspondents relative to the condition of winter wheat as follows: Kansas, 93 per cent; Ohio, 86; Kentucky, 88; Missouri, 86; Wisconsin, 79; Illinois, 77; Indiana, 72; Washington, 70."

Three months ago a well was put down at Cheryvale, and gas found in abundance at a distance of 300 feet. Mains were immediately put in, and in a short time several stores and residences were using the gas for light and fuel. Pleased with the first well, another well was sunk, and gas found at about the same depth as the first, but the pressure of the second well was even greater than that of the first. As both wells have been tested for some time, the citizens have every reason to believe that the flow will be permanent. The city is fortunate in having a Board of Trade, composed of energetic, wide-awake citizens, who are putting forth every effort to induce men of capital to locate and establish manufactories of every kind.

In his crop report for March, Secretary Mohler, of the Agricultural Department, says his reports from 106 counties of the State clearly indicate that the agricultural condition throughout the State on April 1st was, on the whole, satisfactory. The winter was unusually mild and favorable to wintering all kinds of stock, and but for the cold weather and high winds of March the wheat plant would have passed through to spring rains and spring suns unimpaired. From this cause, the plant generally throughout the State has suffered; in southern and southeastern counties the damage has been serious. In many portions of the State, the condition is excellent, and, in a general way, the farmers of Kansas have reason to be encouraged. The increase in area sown to wheat in the State in the fall of 1889, as compared with that sown the previous year, is estimated at 24 per cent, which gives a total area for the State of 1,925,338 acres, or an excess of 374,391 acres over that of the previous year. Eleven per cent is reported winter-killed. The general condition of the plant, as compared with the full stand and unimpaired vitality, is 90 per cent.

CALENDAR.

1889-90.

Fall Term—September 12th to December 20th.
 Winter Term—January 7th to March 28th.
 Spring Term—March 31st to June 11th.
 June 11th, Commencement.
 1890-91.
 Fall Term—September 11th to December 19th.

TO SCHOOL OFFICERS.

The College Loan Commissioner has funds to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioners and the State Agricultural College. Address Jno. E. Hessian, Loan Commissioner, Manhattan, Kan.

LOCAL MATTERS.

The College house on the hill is for rent at very moderate terms. Address the President.

Mayor Roberts has appointed Professor Lantz a member of the Manhattan City Park Commission for a term of three years.

The ladies of the Episcopal Church have been granted the privilege of feeding the multitude on Commencement Day.

Prof. Georgeson has received a considerable consignment of seeds direct from Japan for experimental trial here.

Editor Havermale, of the Olsburg *News-Letter*, visited the College yesterday, and spent several hours in the industrial departments, giving special attention to the Printing Office.

The Board met in regular session on Tuesday, reorganized, and transacted considerable business of importance. The full proceedings will be published next week.

The vegetables in the experimental gardens are making a rapid growth, some varieties of peas having already attained a height of six inches. The condition of the gardens excites the admiration of all visitors.

The annual target practice on Friday and Saturday called out a hundred marksmen, each of whom fired eight shots. The highest score, thirty-six out of a possible forty, was made by B. A. Knox, a Second-year student.

The College has received this week a fine manikin imported especially for this College by Mr. Ward, of Rochester, who selected it in person. Classes in physiology will hereafter receive the benefit of this provision by special appropriation of the last Legislature.

Prof. J. N. Wilkinson, of the State Normal School, paid the College a pleasant visit on Thursday morning, spending the entire forenoon in viewing the buildings, grounds, and farm. He gave a hearty greeting to the students in Chapel, and was as heartily received by all.

Hon. A. R. Greene, whose daughters are members of our Second-year Class, gave a very entertaining lecture in behalf of the Women's Relief Corps Thursday evening. It was entitled, "Under Four Flags," and presented in detail the description and history of the old Spanish fort near St. Augustine, Florida.

The INDUSTRIALIST goes, in its weekly visits, to each of 797 newspapers in Kansas as an exchange for each of them. Only two hundred and fifteen of these return the compliment, and are filed in the College reading room for use of our 500 students. The other 582 give nothing in return for it. This is taxation without representation.

The forthcoming Catalogue will contain eight photo-engravings, showing, in addition to the main building and a view of the grounds, several interiors, among them the Chemical Laboratory, Drawing Room, Carpenter Shop, Kitchen Laboratory, Sewing Room, and Printing Office. A list of the graduates will also be printed as an appendix.

The Board and the Faculty with their wives were entertained in a pleasing and substantial manner by the Cooking Class on Tuesday evening. An elegant supper was served in the Sewing Room, the young ladies attending as waiters. Everybody praised the supper, all of which, even the butter and ice cream, was prepared by the Class under Mrs. Kedzie's direction.

The fourth division of the Third-year Class made their last appearance for this year in public orations yesterday afternoon. Names and topics follow: "A Recent Reform in the Ballot," A. E. Martin; "The Value of Aesthetics," Nellie McDonald; "A Defence of Monasticism," D. C.

McDowell; "The Development of Dress and Manners since Colonial Times," Bertha Winchip; "A Conquering King," A. K. Midgley; "Two Famous Women," Madeleine Milner; "Personal Liberty," P. C. Milner; "A Mistaken Benefactor," H. E. Moore.

Regent Forsyth entertained the Board, Faculty, and students in a ten-minutes' speech in Chapel Wednesday morning, full of practical wisdom, with many happy hits of humor that brought quick response in cheers. He was especially severe upon the man who grumbly complains that the world owes him a living, saying, "The world owes you exactly what you earn by what you do for it."

THE IONIAN EXHIBITION.

Well may the young ladies of the Ionian Literary Society paraphrase a well-known quotation, and say, "We came, we saw, we conquered;" for on Friday evening, April 25th, they presented to the public their first annual exhibition, and to the verdict "well done" there was not a dissenting voice.

Notwithstanding the rainy evening, the Chapel was filled with the friendly and curious, and at eight o'clock the exercises opened with an overture by the College Orchestra, which was followed by invocation by President Fairchild. Miss Mamie Houghton, the Society President, made a neat address of welcome, in which she gave a short history of the Society, with something of the trials attending its organization. Then followed the programme as printed in full below, which was presented in a manner that won much applause from the audience. The address, "The Old World Yields to the New," by Miss Julia Pearce, and the Society paper, the *Oracle*, edited and read by Miss Lotta Short, are worthy of special mention:

PROGRAMME.

Overture	"Polka Di Concert."
College Orchestra.	
Invocation.	
Greeting	Double Duet. Misses Hederstrom, Selby, Vail, and Weist.
Address	"The Old World Yields to the New." Julia R. Pearce.
Debate:	
"Resolved, That the State should furnish Kindergartens, Colleges, and Universities as a part of our Educational System."	
	Affirmative, Alice Vail. Negative, Effie Gilstrap.
Solo—vocal	"Oh! Loving Heart, Trust on." Eda Hederstrom.
Declamation	"Nothing to Wear." Doris Kinney.
Oracle	Lotta J. Short.
Cuckoo Song	Ionian Quartette Misses Kinney, Pierce, Vail, and Wiest.
Oration	"The Women of the War." Fannie E. Waugh.
Instrumental Trio	"Le Cuirassier Galop." Misses Nichols, Reed, and Hederstrom.
Historical Presentation: Scenes from the life of Queen Elizabeth.	
Music Committee	Eda Hederstrom, Susan Nichols.
Play Committee	Maude Whitney.

A score or more of young ladies in appropriate costumes presented, as an after-piece, four scenes from the life of Queen Elizabeth. The first scene showed Elizabeth's coronation, with Mary Queen of Scots in the background; the second was a pantomime representing the meeting of haughty Elizabeth and humble Mary in the garden; the third, a scene at Kenilworth Castle, where Elizabeth meets Amy Robsart, wife of Leicester; the fourth, a masquerade before Queen Elizabeth, in which the maskers represent the nations that have occupied England—Britons, Romans, Saxons, and Normans.

COLLEGE BUSINESS.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. Applications for extension of time on land contracts should be sent to the Secretary of the Board of Regents, at Manhattan.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Kellerman, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study or work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

Applications for Farmers' Institutes should be addressed, as early in the season as possible, to the President.

The Experiment Station should be addressed through the Director.

GRADUATES AND FORMER STUDENTS.

G. W. Waters, '86, called at the College on his way home from teaching in Zeeland.

C. B. Jennings, student in 1882-83, writes from Waynesburg, Pennsylvania: "I wish it were possible for me to return and complete my course at your college."

J. S. Gould, Third-year in 1888, called at the College Monday, having finished his school near Randolph. He is now expecting work in one of the Government Schools for Indians.

P. M. Kokanour, according to the Manhattan *Republic*, will leave on Monday next for his new home in Lake Arthur, La., and will issue the first number of his paper, the *Herald*, on May 15th.

R. U. Waldraven, '89, was a visitor on Saturday last. He will engage in farming this summer near Parallel, and will give special attention to horticulture, it being his intention to pursue post-graduate studies in that line.

L. H. Dixon, '88, writes that he has removed from Trinidad to Denver, Col., where he is head draughtsman for W. N. Meredith, architect. He is boarding at the same place as D. W. Working and E. H. Snyder, '88, and has for his room-mate A. G. Walton, a student in '86 '87, who is draughtsman for L. M. Wood, architect.

COLLEGE SOCIETIES.

SOCIETY HALL, April 18th. The Alpha Beta Society was called to order by President Smith. Music by the Society. Devotion. Election and initiation of members being the next in order, the Secretary was instructed to cast a ballot in favor of G. A. Gratiginy becoming a member of the Society. Mr. Browning, whose name was proposed the previous week, was initiated. The regular programme was then taken up. R. D. Whaley gave a declamation entitled, "The Laven," a poem. Select reading by Elizabeth Hoyt. The question, "Resolved, That the time of wars between nations is past," was argued on the affirmative by Miss Hoop, assisted by Mr. Armour, and on the negative by Miss McDonnell, assisted by Mr. Harmon. The Judges, Messrs. Blachly, McIlvaine, and Newberger, decided unanimously in favor of the negative. The *Gleaner*, presented by Miss Parker, was the last before recess. Upon again coming to order, the Society listened to a solo, by W. Hutto, followed by the Newsman's report. The President then called upon the members for extemporaneous speeches. Nearly all responded with short speeches, making the time devoted to that pass very quickly. Report of committees, on question for extemporaneous speaking, and music. As there was no unfinished business before the house, new business was considered. The President read the names of those in the divisions for *Gleaner* work. B. H. Pound was instructed to see about having some cards printed, and a motion was made to buy one dollar's worth of *Gleaner* paper. Assignment of duties. Report of Critic. Secretary's report. Music, an instrumental selection by Miss Corlett, ended the programme. J. M. S.

SOCIETY HALL, April 19th. The Webster Society was called to order by President Davis. Prayer by D. C. McDowell. Minutes of previous meeting read and approved. The question for debate was, "Resolved, That the eight-hour system should be adopted in the industrial world." Mr. Creager opened the debate on the affirmative. He showed the great advantages of machinery in the labor of today. Man wants time for mental culture, and this he will not have if he is compelled to labor ten hours per day. The same work can be accomplished in eight hours as in ten, because laborers, as a class, will be more intelligent, and the conditions under which they labor, more favorable. Mr. Spilman, the first speaker on the negative, spoke of the fact that as the advantages of the laborer increase, so labor throughout the industrial world increases. If machinery aids the laborer, it takes labor to produce the machinery. We need all the time we can get. He spoke of the disposition of the laborer to idle away his time, and prophesied this to be the case if two hours more were allowed him; also of the low grade of intelligence that pervades our laborers as a class, and of the increased expense of the eight-hour system. T. E. Wimer having been chosen to supply the place of Mr. Sanders, absent, replied to the arguments of the negative, and, after turning over again the arguments of his colleague, concluded: "There is a certain amount of labor to be done; if not done in ten hours, it will be done in eight, thus giving the laborer two hours per day for intellectual development." Mr. Martin, chosen to take the place of Mr. McDowell, said that the work performed in ten hours could not be performed in eight; that the cutting of hours means a cutting of wages, and the cutting of wages means a revolution among the laboring class. He also showed the relation of labor to capital, and concluded that the adoption of the eight-hour system meant simply industrial failure in the United States. Mr. Creager, in closing the affirmative, spoke of the universality of the adoption of the system. We may for a time have lower wages and less work done; but when all is adjusted, we will perform more work, have as good or better wages, and more intelligent workers. Mr. Spilman closed the debate on the negative by reviewing the arguments of the affirmative, after which the Society decided in favor of the affirmative. Mr. Milner delivered a declamation on "The Idea of Honor." Mr. Edelblute read a selection entitled, "Ambition Lasting." Mr. Davies favored the Society with a discussion of "Westminster Abbey," giving its history, and stating by whom, and for what purpose constructed. L. S. Harner reported the news of the week.

HAMILTON HALL, April 19th. President Cranston called the Hamiltons to order, and R. W. Newland led in devotion. The minutes of the last meeting were read, and after about fifteen minutes of interesting parliamentary drill, we reached the programme of the evening. C. D. Adams' declamation was by Story, entitled "Modern Republics." F. J. Brock then read the *Recorder*. It contained a number of well-written and amusing articles. The titles of some suggest the contents: "The Antics of a Senior," "Bismarck's Work in the German Empire," a poem, "What the Juniors Do," "The Story of Jephthah" (revised), "What a Bird Told," "The Story of a Raindrop," etc. U. G. Balderston read an essay narrating the treatment of some Chinamen in a western mining camp. The debate was upon the question, "Should the Farmer's Alliance enter politics?" F. M. Licott led the affirmative. He said there are several millions of farmers in the Alliance. The unity of their organization would give them great political power. The high freights render the profits of farming small, and the high rates of interest increase the burles. These can be regulated with advantage only by legislative action, and to obtain the power necessary to control such action the farmers must act together. It is impossible for them to unite in any existing party, so the Alliance must assume the attitude of a political organization. W. S. Pope thought that the prejudices of former associations would prevent a harmonious action in the new work. The old ideas of political necessities would receive prominence, and the result would be the formation of a new party, without doing any good. The Alliance can be strongest and can work most effectively by meeting the attacks of monopolies as a monopoly. Its organization as a party would deprive the farmers of the assistance of classes whose interests are similar. H. C. Cobb continued the argument on the affirmative. The work of the Alliance would be more practical if it offered a means of benefiting the farmers' condition. The only way to reduce the power of monopolists in Congress and in our Legislatures is to choose the representatives of the farmers from the farmers. The principal objection which G. C. Seymour thought of was the probability that the farmers couldn't agree as a political party. The decision upon the merits of the debate was referred to the Society and, after some time, a decision was rendered in

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favor of the affirmative speakers. We then passed the remainder of the programme, and entered upon the consideration of several items of business, where the discussion of numerous questions of parliamentary practice helped to engage our attention until the orders of the day were taken up, and at the usual hour, the Society was declared adjourned.

THE LOUISIANA LOTTERY.

The chances of the Louisiana Lottery to get its charter renewed are good, it is said. The majority of the population are pronounced in favor of the proposition. They, however, think \$1,000,000 per annum should be exacted of the company, instead of \$700,000 as now. They claim that, if the money paid into the State treasury yearly by the concern was withdrawn, many charitable institutions would be without any means of support whatever, as the State is almost bankrupt. The bankers of New Orleans assert the money can often be borrowed by farmers and others in that city at 3 per cent. They say that one-fourth the banking capital of that city is furnished by the Lottery Company.

Those who oppose the lottery say that it is ruining the morals of the citizens of the State, and that its vicious effects are extremely disastrous to religious, social, political, and financial growth and well-being of the State and its citizens. They claim that it encourages gambling with its concomitant evils, and its influence upon the rising generation is such that the State is breeding a race of gamblers. They regard the lottery as the most corrupt institution that this country has ever known and ever countenanced by law, and a foul blot upon the escutcheon of the State, that should by all means, at any cost, be wiped out of existence.—*Southern Live Stock Journal*.

Few people have any conception of the enormous amount of money which goes daily into the coffers of that monster of iniquity, and greatest of all swindlers, the Louisiana lottery, located at New Orleans, La. New Orleans is a city of about 300,000 inhabitants, and transacts a large business. When it is known that two-thirds of all the postal orders, two-thirds of the registered letters, and one-half of the total mail at the New Orleans post office is for that concern, some idea of the magnitude of the sum of money filched from its ignorant dupes may be conceived. Its patrons are largely the more ignorant class of workingmen, servant girls, ignorant negroes, and boys who have not yet attained the mature age of judgment and sense. A banker in a small town of about 1,100 inhabitants out west told us that he kept, as nearly as possible, an account for a year of the amount of money sent to this lottery from his town, and how much came back. The result was over \$300 sent to the lottery and one prize of \$10 returned. We think if an investigation could be made, this would be found to be the average throughout the United States. Sending money to a lottery is like handing it to a rogue without any security. The managers have everything in their own hands without any check whatever. They award some prizes, it is true. They have to do that, but it will be found they are only planted where they will do the most good as an advertisement. The managers are rogues, otherwise they would not be running such a demoralizing institution. What reason have we to suppose they will be more honest than rogues of lesser calibre, such as we are familiar with.

Its demoralizing influence penetrates almost every avenue of political and social life in Louisiana. We are glad to see that a movement has been inaugurated for the purpose of crushing it out.—*Farm, Field, and Stockman*.

TO RAISE PEANUTS.

When all danger of frosts is past, the soil is bedded up and prepared as for tobacco, leaving only a slight furrow mark between the rows. In the center of each of these beds, in a straight line, plant two seeds at a distance of eighteen inches; also have reserve plants to fill the places of those destroyed by cut worms, etc. The after cultivation is simply to keep down the weeds, preserving the shape of the beds until near the time of blossoming. A narrow cultivator is then run through the rows, followed by a horse team to earth up the plants. The earth is afterwards leveled to present a flat hill, in which nuts are to form. After this, weeds or grass must be pulled by hand. Under good cultivation, the yield is sixty to seventy bushels, and from that to eighty bushels per acre.—*Colman's Rural World*.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

The Regents of the Kansas University have decided to expend \$8,000 in repairing the foundations of the main buildings.

Judge R. P. McCoiloch went to Freeport to deliver an address at the commencement exercises of three schools to be held at that place.—*Anthony Republican*.

The fraudulent census returns of Lyon County played a rather severe trick on Prof. Joseph Hill by reporting him as the father of a family of thirteen, when in fact he was a single man. He says it was a criminal joke.

The Faculty of Garfield University at Wichita have expelled four students. Two of these, from the Literary Department, were discharged for visiting gambling halls, and two, from the Department of Theology, for going to still worse places.

The teachers of Jackson County held their April meeting at Oskaloosa April fifth. State Superintendent Winans delivered a very able address. A free dinner, appreciated by seventy-five hungry teachers, was served by the ladies of the city.

At the State Normal in Emporia, after the Seniors had planted a class tree, the Juniors painted it a brilliant red. In the State University, under similar conditions, the tree was painted a delicate green. There is a better appreciation of the fitness of things in the University.—*Lawrence Journal*.

A meeting of the City Superintendents of Schools of the State will be held in Topeka on May 9th, to consider a plan of uniform high-school work of a standard sufficiently high to certificate graduates from the high schools to the State University, State Normal, and State Agricultural College.

Mrs. J. K. Hudson, wife of the editor of the Topeka *Capital*, is possessed of literary ability of high order, and has already done considerable work. A serial story, "A Child of Erin," is now running in her husband's paper. As yet, Mrs. Hudson's fame has penetrated but little outside of her own State, but it will not be long before her fame will be confined only by its author's possibilities.—*Printer's Album*.

At Lawrence about 350 of the students of the University gathered, and, after organizing, marched to the residence of Prof. Snow, the new Chancellor, where they were cordially received. The Professors of the Faculty and Regents made addresses, and after a delightful interchange of friendly courtesies, and the utterance of good will to Chancellor Snow and the University, the procession re-formed, returned to the center of the city, and dispersed.

State Superintendent George W. Winans returned yesterday from Chapman where he delivered an address before the students of the Dickinson County High School. This is the only county high school in the State. Superintendent Winans says that, although it is yet in its first year, it is a splendid institution and doing most excellent work. There are now 105 students in the school from various parts of the County, and Superintendent Winans says that he has never seen a more persevering and assiduous set of students in any school. There are three courses: one which fits the student for the university; another which trains him for teaching, and another which is fully up to the course of study found in the city high schools.—*Topeka Capital*.

At the meeting of High School Principals and City Superintendents held at Lawrence, Kansas, April 4th and 5th, the relationship of the High School to the University was discussed with the Faculty, who showed that the High Schools of the State were unable to prepare pupils to enter the Freshman Class of the University in Latin, Greek, French, and German, but that these could meet the requirements in mathematics and in English. Between the standard required for entrance to the Freshman Class of the University and what is possible to be accomplished by the High Schools there is a great gap, that at present can only be bridged

by the united efforts of the University and those directing the public schools. There is a willingness on the part of the State University to make concessions by changing their course of study so as to adapt it to the needs of the Common School system—not necessarily by lowering the standard, but by accepting better and more thorough work in English in lieu of Greek. This will make it possible for all High Schools having a three-years' course to become fitting schools for the University, and, at the same time, give the best possible preparation to High School pupils for their life-work should they never enter the University. But there should also be a definite relationship established between the High Schools, the Agricultural College, and the State Normal School, by which pupils who have completed certain courses of instruction may be accredited with the work accomplished, and thus be enabled to complete the work in those institutions in less time. This matter has been presented to the State Board of Education, and after a full discussion of the purposes undertaken, it received the endorsement of the entire Board. In order to discuss these points fully, a meeting of City Superintendents will be held at Topeka, May 9th, at 9 A. M. There will be no fixed programme, but each Superintendent should come prepared to discuss the best possible High School course which can be maintained.

KINDRED INSTITUTIONS.

Bulletin No. 17, by the Agricultural Department of South Dakota Agricultural College, is devoted entirely to small grain.

The Fifteenth Annual Report of the Ontario Agricultural College and Experimental Farm, located at Guelph, Canada, combines the catalogue of officers and students with reports of the financial officers and the Professors of Geology, Chemistry, Veterinary Science, and of Dairy Husbandry.

Bulletin No. 10, of the New Hampshire Experiment Station, reports upon co-operative fertilizer experiments, showing a comparison of manure, ashes, and chemicals.

Bulletin No. 11, of the Colorado Experiment Station, gives results with sugar beets.

Bulletin No. 23, of the Wisconsin Experiment Station, is devoted to "Prevention of the Apple Scab."

Newspaper Bulletin No. 1, of the Vermont Experiment Station, is devoted to the "Wastes of the Dairy."

Part 2nd, of the Report of the Pennsylvania State College, is devoted to the work of the Experiment Station for the year 1887, and includes a report upon experimental work done prior to the formal organization of the Station.

Bulletin No. 1, Vol. 3, second series, of the Ohio Experiment Station, is devoted to experiments with potatoes.

"Experiments in the Culture of the Sugar Beet in Nebraska," is the title of Bulletin No. 13, of the Nebraska Experiment Station.

The Fourth Annual Report of the State Veterinarian of Wisconsin has a record of observations and work upon glanders, glanders in man, pleuro-pneumonia, Texas fever, sheep scab, and hog cholera.

The Second Annual Report of the Colorado Experiment Station is a well-printed document of 136 pages of matter descriptive of the Station work of 1889. The report of a special examining committee appointed by the Colorado State Grange and the State Horticultural Society is signed, on behalf of the Grange, by D. W. Working, a graduate in 1888 of the Kansas Agricultural College, and published as a part of this report.

The Seventh Annual Report of the State Experiment Station of Massachusetts makes a bulky volume of 333 pages, descriptive of the work of the past year.

Bulletin No. 26, of the U. S. Department of Agriculture is devoted to a record of experiments in the production of sorghum sugar, made during the past season, at Conway Springs, Attica, Medicine Lodge, Ness City, Liberal, Arkalon, Meade, Minneola, and Sterling, Kansas, besides several other places in the United States.

Bulletin No. 5, by the Horticultural Department of the Michigan Experiment Station, is a report upon comparative tests of vegetables and their methods of culture. Bulletin No. 58, of the same station, is issued by the Zoological Department, and reports upon insecticides.

MANHATTAN ADVERTISEMENTS.

R. ALLINGHAM, dealer in Fresh and Salt Meats. Special attention to student trade. Goods delivered free.

W. P. HOLMAN,—Drugs and Toilet articles, Fancy Groceries, Fruits, Confectionery, Nuts, Cigars and Tobacco.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

MICROSCOPES.—Swingle and Varney's Bookstore is the place to get your Microscopes, Dissecting Glasses, Text-books, and Student's Supplies of all kinds.

PICKETT'S NEW LIVERY STABLE.—Everything new and strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

BATH ROOMS.—At Manhattan Shaving Parlor, South Second Street. Hot and cold baths always ready. Everything first-class. Special care taken with ladies' and children's hair cutting. Razors bought and sold. Give me a call. PETE HOSTRUP, Proprietor.

L. ESLIE H. SMITH, Boots and Shoes, 302 Poynz Avenue, first door west of Stingley & Huntress. A full line of Rubber foot wear of the best quality at the lowest prices. Mens' all Solid Leather Dress Shoes, \$1.05. Ladies' Fine Dongola Button Shoes, \$2.00. Reliable goods at low prices.

MANHATTAN BANK.—E. B. Purcell, banker. J. W. Webb, Cashier. A general banking business transacted. Bills of Exchange on all principal cities and towns of Europe. All bills have personal, faithful, and prompt attention of our attorneys. Proceeds remitted promptly, at current rates of exchange, without any charge of commission.

E. B. PURCELL, Corner of Poynz Avenue and Second Street, has the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered in all parts of the city and at the College, free of charge.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds. Watches, Clocks, a magnificent line of Jewelry of the best makes. A big variety of Notions that students need. Musical Instruments, Strings, Sheet Music, Instruction Books. Our collection of Spectacles in gold, silver, and steel cannot be beat. Don't forget our ten-cent bargain counter. Everything at lowest living prices.—"75."

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I. D. GRAHAM, Manhattan, Assistant Secretary.

FACULTY.

GEORGE T. FAIRCHILD, A. M., President,
Professor of Logic and Political Economy.
GEORGE H. FAILVER, M. Sc.,
Professor of Chemistry and Mineralogy.
EDWIN A. POPENOE, A. M.,
Professor of Horticulture and Entomology, Superintendent of Orchards and Gardens.
WILLIAM A. KELLERMAN, Ph. D.,
Professor of Botany.
DAVID E. LANTZ, M. Sc.,
Professor of Mathematics, Librarian.
JOHN D. WALTERS, M. Sc.,
Professor of Industrial Art and Designing.
IRA D. GRAHAM, B. Sc.,
Secretary, Instructor in Book-keeping, and Superintendent of Telegraphy.
OSCAR E. OLIN,
Professor of English Language and Literature.
MRS. NELLIE S. KEDZIE, M. Sc.,
Professor of Household Economy and Hygiene.
MRS. ELIDA E. WINCHIP,
Superintendent of Sewing.
OZNI P. HOOD, B. Sc.,
Professor of Mechanics and Engineering, and Superintendent of Workshops.
ALEXANDER B. BROWN, A. M.,
Professor of Music.
JOHN S. C. THOMPSON,
Superintendent of Printing.
JOHN F. MORRISON, Lieut. 20th U. S. Infantry,
Professor of Military Science and Tactics.
FRANCIS H. WHITE, A. B.,
Professor of History and Constitutional Law.
CHARLES C. GEORGESON, M. Sc.,
Professor of Agriculture and Superintendent of Farm.

ASSISTANTS AND FOREMEN.

J. T. WILLARD, M. Sc., Assistant in Chemistry.
C. M. BRESEE, M. Sc., Assistant in Chemistry.
JENNIE C. TUNNELL, B. Sc., Assistant Librarian.
F. A. MARLATT, B. Sc., Assistant in Entomology.
H. M. COTIRELL, M. Sc., Assistant in Agriculture.
WM. SHELTON, Farm.
S. C. MASON, Gardens.
WM. BAXTER, Greenhouse.
C. A. GUNDAKER, Blacksmith Shop.
W. L. HOUSE, Carpenter Shop.
A. C. McCREADY, Janitor.
W. T. SWINGLE, Assistant in Botany.

GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 p. m., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

COLLEGE TRAINING IN AGRICULTURE.

BY PRES. GEO. T. FAIRCHILD.

I PROPOSE to present in this paper an outline of the training in agriculture which best serves the end sought in such an institution. In this connection, it will be acknowledged that any such training must be in a course of study and practice definitely arranged, to give the clearest understanding of the subject studied, and the most natural and complete development of ability in the student. The whole course must be so substantial in character as to give discipline in observation and judgment, as well as information, and such practical acquaintance with the general world as to make one familiar, at least, with the ways of finding knowledge when it is wanted, and using it to influence the thoughts of others. The thought of Sir Francis Bacon, that man can do nothing but move things, and must leave nature to do the rest, emphasizes the importance of such scientific training, since the how and when and where to move things for the successful making of a crop out of seed, soil, sunshine, and shower, depend wholly upon our understanding of the why we move. It is plain, then, that any satisfactory provision for training in agriculture requires a thorough training in those sciences most clearly associated with the facts of agriculture. And yet, all these are but the preparation. They may be possessed without agriculture, and may be taught without reference to agriculture.

A college which would train farmers must not only give the tools, but teach their use. For this, there is needed a succession of lectures, combining such facts and principles and rules in the art of agriculture as have most general application, and can be most fully explained in connection with the facts of science. For clearer explanation of my meaning, I may suggest a few of the topics most likely to interest the inquiring minds of students, and most profitable to those who seek a use for facts among the farmers. Without any attempt to exhaust the subject, or even to discriminate exactly the points of importance, I venture to name a series of topics which must be acknowledged to be worth distinction from the standpoint of farmers.

The Professor of Agriculture would find it easy to fill a four-years' course with information which any farmer might be glad to have. We will name only a few of the prominent topics or questions of interest: suitable farms, in soil, exposure, relation to market, shape and convenience for division for every variety of cropping, and handling of stock; suitable crops for the market most convenient, for the soil available, for the capital controlled, for the climate of the region, for the variable seasons of our fickle climate, for the help at hand, and for the conditions of tillage; suitable stock for markets within reach, for the feed-yard, for the dairy, for the crops likely to be raised, for buildings to be afforded, for the skill of the owner, for the help he may secure, and even for his personal taste; suitable culture, for various crops on various soils, in various seasons, with rotation and without, involving available experience and machinery; suitable handling of stock in breeding, for distinct ideals in both butter and cheese, in pork, in mutton or wool, in horse-flesh for draught and road or the race course; especial principles of fertility, involving seed selection, methods of planting, tillage, drainage, irrigation, manuring, rotation; diseases of crops, as smuts, rusts, mildews, rots, and blights; diseases of stock, accidental and contagious—black-leg, pleuro pneumonia, splenic fever, stalk disease, hog cholera, foot-rot, grub; enemies of stock and crops in the insect world—lice, worms, bugs, beetles, and borers, too numerous to mention; protection of crops, in proper

stacks, barns, cribs, granaries, and silos; and protection of stock and care of stock in suitable pens and corrals, tying and handling; good feeding by corn and cooked food, pure water and warm, good air and sunlight. Then comes the whole range of topics implied in wise marketing and preparing for market, in which the whole subject of political economy may be involved for deciding the relation of price and cost under the great law of supply and demand.

These are but suggestions from among the multitude of topics which a skillful teacher may treat to advantage of those who are to follow farming; for while information upon these topics may be culled from a variety of sources, only the man of experience can judge of its proper application.

But a still more practical training in agriculture is needed by those who are to follow it. The four years of youth from seventeen to twenty-one make a greater change in the life of a man than almost any other equal period. The boyish ways give place to manly action; the boyish thoughts are supplanted by a man's plans; the habits of manhood are largely formed, and the ideas of everyday life, which must guide in future accomplishment, are largely made. Now, if during these four years of student life no opportunity is given for direct contact with the soil and its crops, however excellent the early training may have been, it is remembered only as something outgrown. Moreover, the lectures in agriculture and horticulture suitable for such a course must have illustrations of their meaning and application from actual operations upon the farm and in garden and orchard. Without such illustrations felt directly by the students in their association with the teachers, such lectures would be out of place in any course of study. For these reasons, it has seemed always desirable that a college of agriculture should provide for direct training in the art of agriculture as well as in the general knowledge of its ways, means, and methods.

Such training must be in the form of actual work needed to carry on the operations of farm, orchard, and garden. Such work has the advantage of making the student familiar with the farm management in all its details of contrivances for accomplishing definite purposes, and all the results of such managements are tested in use, and from criticism of methods is derived strength of judgment concerning the very important every-day items of farm practice. Such a training of judgment is quite as important as knowledge, since it makes knowledge into wisdom and develops tact. No less important is such a course in manual labor for sake of habit. No one at any time of life can forsake manual labor even for a limited time and not find himself awkward in beginning again, and loth to undertake the task with unused muscles. It is even more difficult at this stage of growth; and habits of manual labor must be maintained if one would find himself efficient in such tasks after a course of study. It is not, then, a waste of time or energy for a young man to perform even the drudgery of the farm; for that is the definite part of what a farmer must know in practice. But it is only by such constant attention to the little things, as well as the great, that one can actually know his business. We all know that it is possible for a doctor or a lawyer to know a great deal about either medicine or law without success in practice. Just so on the farm: knowledge alone of farm practices followed by others will serve but little purpose. A good farmer must be critical in his acquaintance with things which he handles every day. He must have his tastes, his preferences in minute details, and be able to act almost without thinking

from his familiar acquaintance and habit of judging.

A still more important reason for such association of actual work with college training is found in the fact that agriculture must be developed through actual experiment in the things themselves; and the youth who has to deal with the progress of such experiments has the best of opportunity for knowing what can, and what cannot, be well attempted in any ordinary farming. The interest in experimental agriculture must be an important part of the training offered also, since any important changes in the modes of agriculture require long years of trial before final acceptance. The better prepared by familiarity educated young farmers are, the more perfect will be their preparation for accepting and testing such new methods. Finally, it is only by actual handling of things themselves that any general executive ability can be acquired, and the young man who expects to use his education to advantage on the farm must have used that education step by step, while gaining it, in the same general operations that require his attention in after life.

All these considerations, and others, have led to the introduction of actual labor as one of the essentials of industrial training everywhere, and those institutions which have most carefully and thoroughly sought to meet these requirements are admitted to have accomplished most in the line of such training.

It is now some thirty years since the first crude attempts at college training in agriculture. The results are more than might be expected, when we think of the slow motion of society in such improvements. Hosts of educated men are busy in studying the general condition of productive farming, and no one can fail to see the effect in the general advancement of the years. In spite of the prevailing depression among farmers, there are stronger and better trained men, ready to lead the masses, than ever before.

The existence of the State Experiment Stations is made possible by having such trained men, and their general usefulness is multiplied a hundred fold by the reception which their investigations meet among people already trained in such studies. Their influence is felt through the "agricultural press," the efficiency of which is largely secured through men of such training. At the same time, influential leaders among the younger farmers are coming forward with a clearer understanding of the relations sustained by the farmer to the welfare of the country, and a better preparation for safe leadership. Certainly no one who has watched the development of this idea of college training in agriculture can doubt its accomplishment of great results for better and more profitable farming. The actual proof of good work is given by personal statistics of those who have tried, and found useful, the methods described.

Such methods have been followed by the Kansas State Agricultural College for some years past; barely long enough to establish its reputation among those who have tested its work. Its five hundred students yearly are chiefly from farmer's homes, and carry back to the same homes the influence of their training, in higher appreciation of their opportunities in a community of farmers. The State is receiving abundant returns for its moderate amount invested in buildings and apparatus, and its endowment of half a million dollars is rendered effective to the very people for whom it was intended.—*Extract from Paper in Quarterly Report Board of Agriculture, March 31, 1890.*

THE SECOND-HAND BOOK STORE.

BY PROF. D. E. LANTZ.

SHOPS for the sale and exchange of old books may now be found in almost every city in this country. These "literary junk shops" have a character somewhat more fixed than that of shops for the disposal of ordinary cast-off odds and ends and partly worn-out articles. While these latter depend entirely upon the poorer people for their trade, the second-hand book-dealer has customers from every station of life. The street Arab who buys a worn first reader for a dime may brush against a millionaire in search of some rare first edition. A man's presence in one of these stores is no argument for his poverty, but rather an indication of advanced literary tastes. True, the bib-

liophile is generally a poor man, with very little to invest; but his interest in the second-hand books will be entirely independent of his financial circumstances.

To the special student in certain lines of literature, or to the purchaser for a public library, these second-hand stores form one of the chief attractions of the city. Filled with musty and dusty volumes, usually without much attention to classification, they seem very uninviting to the ordinary observer, and yet, buried here, one can often find treasures of no small value to the book collector.

The second-hand stores of our larger centers of population are not the richest in literary treasures; for these points bring also the largest number of buyers, who gather up promptly all the works valuable in the eyes of the book-lover. It is in the smaller inland towns, where the dealer cares little for sharp bargains and hurried trade, that one can most frequently find the books that are just to his taste. It is here also that he can usually make the most satisfactory terms in their purchase.

The keepers of these shops in the provincial towns have frequently little conception of the actual value of the books they offer for sale. I have met some of them who knew nothing whatever of either first editions, fine bindings, scarce books, or those out of print. Age is sometimes assumed as the only measure of the book's value. A few months ago, I had occasion to look over the stock of a second-hand dealer. Before I left his shop, he called my attention to some old books which he considered so valuable that he kept them under glass. Upon looking at these "rarities," I found them to be eighteenth-century books in Latin, mostly college text-books. The most valuable among them was a well-printed Virgil, which ought to have sold for \$3.00. The others were not worth anything, for they were in badly broken bindings, foxed, and not scarce. Each of the volumes was labeled with an inscription, such as, "This book is one hundred and twenty years old," and when I asked the price, the dealer was almost afraid to name one, for fear that it would be too low. Aside from this misunderstanding as to real values, this dealer had an excellent stock of second-hand books, some of which were rare, and would have commanded good prices at a metropolitan auction.

There is no reason why the dealer in second-hand books who is acquainted with books themselves, and the channels of trade in them, should not be successful in his business. Librarians and private buyers all over the country are depending more and more upon them for their supply of books out of print, and for magazines to fill broken sets. It would now be difficult to do without the second-hand book store; and as our libraries grow in numbers and importance, their field of usefulness will be extended largely by the help of the second-hand dealers.

Last fall I traveled through Kansas from east to west several times, and took pains to obtain the written results of diversified farming and also what I call single-crop farming. I have over 100 letters, and, while no two are exactly alike, they are surprisingly unanimous in the story they tell. Those who raised corn and wheat, making it their sole reliance, are dispirited, poor, and in desperate straits. Those who had some cattle, hogs, onions, sweet potatoes, watermelons, alfalfa, or other products to sell, made upon some of their acres a large amount and are able to hold on to their surplus corn and wheat. The best results have been attained by those farmers in Southwestern Kansas who irrigated. I have a letter from one farmer who assures me that he raised and sold watermelons from two acres for \$272. Another made \$375 on five acres of onions. Yet another raised hogs on alfalfa, and says he can make plenty of money on pork at 2½ cents a pound. This year, 1890, he will have at least 400 hogs. A number of farmers claim they made between \$30 and \$40 per acre from alfalfa.—*A Business Man, in Topeka Capital.*

KANSAS THRIFT.

The farmers in this vicinity who have unmortgaged farms, and whose checks are as good as gold, raised their crops on the farm, and not on the store-steps and curb-stones. They sowed seed in good soil, not dissension and dissatisfaction in the ranks of men.—*Cherryvale Republican.*

Kansas is said to be the most remarkable grain growing State. Her soil is rich and black, her people full of good victuals. Corn is low at the present time, but there is enough for food and fuel for the winter, the crop being unusually large. The man who said that by the light of his burning corn the Kansas farmer was enabled to read the mortgage on his farm was a pessimist, with a tendency toward uxoricide. Out of the labor and anguish of war, drouth, and pestilence in Kansas was born a beautiful State, and within her borders dwell a proud, prosperous, and prohibition people. Kansas is one of the most healthful States in the Union. People live so long that they get tired of life. The death rate is only eight to every thousand people, the mortality being almost as low as it is among French duelists.—*Bill Nye.*

J. N. Barbee, traveling man for the *News*, came in Saturday from an all-week's trip, during which he was through the Counties of Edwards, Pawnee, Barton, Rush, Ness, Lane, and Scott. He reports wheat in all of them in fine condition, and the acreage large. The heavy winds and freeze wrought no special damage, and with favorable weather for the next two months, Western Kansas will come to the front with the largest and best wheat crop she has ever raised. There has been, Mr. Barbee says, an abundance of rainfall, and the ground hasn't been in a better condition for a long time. Rush, Ness, Lane, Scott, Wichita, and Greeley Counties have 200,000 acres of wheat. The farmers are all in good spirits, and the business men in town, as well as the farmers, are working like Trojans.—*Hutchinson News.*

STATISTICS OF KANSAS RAILROAD FREIGHTS.

A State official has been making investigations as to the charges made for carrying freight by the great lines of Kansas. It has been found that in 1888 the rate per ton, per mile for freight on the Union Pacific railway was 2.313 cents; since that time there have been numerous reductions, all of them permanent. Some of these reductions have been voluntarily made, while many have been made through the medium of the Board of Railroad Commissioners. Altogether they have aggregated within a fraction of 50 per cent, while expenses and maintenance have remained about the same. The figures stand: Rate per ton per mile, 1883, 2.313 cents; rate per ton per mile, 1889, 1.166 cents. The full force of these reductions may be seen in the following figures: Number of tons hauled one mile, 1883, 641,593,724: freight earnings, same year \$14,844,151.85. The same tonnage, with the rate per ton per mile of 1889, would produce as earnings or revenue, \$7,480,982.85, showing an actual reduction in the same business of \$7,364,169.00.

Of course more freight was hauled in 1889 than in 1888, but the same tonnage is used to show what the reduction has really been.

Practically the same results are to be found in the Santa Fe system, the difference in figures bringing about the same decrease—50 per cent.—*Kansas Financier.*

FARM STUDIES.

There are many good farmers who read but little, but every good farmer is a student. He investigates the same problems that are discussed in the best agricultural literature. He sometimes professes to despise science, but he is himself pursuing the same inquiries which, in a more exact and careful way, are prosecuted by the chemists and botanists at the experiment stations. So far as he is successful, he is a man of science. He may profess to scout at theory, but he has a theory of his own for every process and practice on his farm. For such a farmer thinks before he acts. He reasons from his experiences, interprets the results of former labors, and makes his conclusion the basis of his practice. That conclusion is a theory. It differs from a scientific theory in that it is based on fewer and more imperfect data. All theory is confessedly imperfect because we never know all the facts in the case, and if we did our judgment is fallible. Scientific theory is an approach to truth—a nearer approach than that of the successful farmer. But none the less that farmer is successful because he is a theorist.—*Philadelphia Press.*

CALENDAR.

1889-90.

Fall Term—September 12th to December 24th.
 Winter Term—January 7th to March 28th.
 Spring Term—March 31st to June 11th.
 June 11th, Commencement.

1890-91.

Fall Term—September 11th to December 19th.

TO SCHOOL OFFICERS.

The College Loan Commissioner has funds to invest in school district bonds *at par*. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioners and the State Agricultural College. Address Jno. E. Hessian, Loan Commissioner, Manhattan, Kan.

LOCAL MATTERS.

Mr. Kessler, State organizer of the Farmer's Alliance, was an interested visitor on Thursday.

Mrs. Lantz is making a two-weeks' visit to her relatives in Colorado.

An adjourned meeting of the Scientific Club was held last evening.

J. T. Rumble's father paid him a visit last week, spending Friday at the College.

The College house on the hill is for rent at very moderate terms. Address the President.

Professor Hood has added a convenient chest of drawers for drawings to the equipment of his office.

The twenty-six members of the Fourth-year Class have written their orations for Commencement.

Prof. Lantz is busy in compiling the lists prepared by the Faculty of the books to be added to Library this summer.

The ground is ready for the hundreds of varieties of sorghum under Prof. Failyer's care in analysis for sugar content.

The College cribs gain this week several hundred bushels of corn by purchase. It is always safe to keep the cribs well filled.

The next Bulletin of the Station, No. 10, will record experiments in propagation and cultivation of trees and shrubs in Central Kansas.

The Manhattan Horticultural Society will meet in Horticultural Hall on Thursday, May 8th. Mr. Baxter, of greenhouse fame, will read a paper.

C. W. Earle, of the Fourth-year Class, is on crutches, and for a few days was confined to his room, by a sprained ankle received during gymnastic exercises.

The members of the Cooking Class are rejoicing in remarkably good pictures of their group, taken upon the south corridor steps by Mr. G. F. Dewey, of Burgoine's gallery.

Mr. E. Y. Hill, of Baker University, called on Wednesday enroute to Lincoln, Neb., to attend the Inter-State Oratorical Contest. Mr. Hill is editor of the University *Review*.

The friends of W. J. Burtis, '87, F. C. Burtis, Third-year, and E. R. Burtis, Second-year student, sympathize with them in the death of their mother, on Tuesday of this week, after a long illness.

The College Social, to which graduates, students and their parents, as well as the families of employees are welcome, will be on next Friday evening. For lack of room, the public are not invited.

President Fairchild has a paper, "College Training in Agriculture," in the first quarterly report of the State Board of Agriculture, just published, extracts from which will be found elsewhere in this paper.

A large sack of sugar-beet seed was received this week from the Department of Agriculture. The five varieties thus secured will be tried with others already provided for in Prof. Failyer's plans for the year's experiments.

The photographs for the new Catalogue engravings were made on Friday. The view of the grounds was taken from a thirty-foot scaffold, erected just outside the grounds near Prof. Popenoë's residence, and shows all the buildings.

The Alumni Association is making excellent plans for the triennial gathering, at which there will be both "feast of reason and flow of soul," as well as the substantial banquet of palatable sweets so lavishly provided on such occasions.

The Experiment Station, Farm Department, has planted 130 varieties of corn for comparison of growth, yield, and quality. These, added to

the 85 varieties of oats already growing, and the 35 varieties of forage plants soon to be planted, will give a full complement of care to Prof. Georgeson and his Assistants, without mentioning an indefinite variety of tests for modes of culture in wheat, oats, corn, and roots, already underway.

The old white horse "Scott," which has borne the burden and heat of the farm work for these many years, not to mention certain indignities suffered at the hands of mischievous Halloween marauders, shuffled off this mortal coil on Monday, relieved from the pains of age by a merciful bullet.

"Our Neighbors" was the title Secy. Graham gave to his interesting lecture in Chapel yesterday afternoon. Under this head was included, not only the folks next door, or in the next block, whose virtues and eccentricities were quaintly pictured, but also Nature, in her varied forms,—the trees, the rocks, the streams,—neighbors with whom we may safely and advantageously be on terms of intimacy, and who will never "cut us" for some fancied affront or slight. In student life, our neighbors were shown to be those who give us a friendly lift over the hard places, doing a work in this direction that is beyond the power of the best teacher; to be the inmates of the library,—books of science, art, literature, travel,—to whom we never appeal in vain for aid—these are "Our Neighbors" in the fullest sense of the term.

BOARD MEETING.

All the Regents were assembled at the meeting last week, and the Board was reorganized for the year by election of officers as follows:

President, Joshua Wheeler; Vice President, Morgan Caraway; Treasurer, Jno. E. Hessian; Secretary, Geo. T. Fairchild; Loan Commissioner, T. P. Moore.

The President named the following Standing Committees:

Farm Management, Regents Forsyth, Finley, and Wheeler; Horticulture, Regents Moore, Hessian, and Caraway; Finances, Regents Caraway, Finley, and Forsyth; Buildings and Grounds, Regents Hessian, Forsyth, and Fairchild; Employes, Regents Fairchild, Hessian, Moore, and Wheeler.

Action was taken cancelling the contract upon N. W. 20, 12, 17, in Shawnee County, assigned to A. J. Hoisington, which contract is forfeited by failure to meet the payments of interest, though several extensions have been granted. Other delinquents upon contracts were given until June 1st to pay up arrears of interest, with provision for extension upon principal if requested.

The usual joint meeting of the Board and Faculty was held on Tuesday evening, at which each member of the Faculty made a statement of the condition of his department, the work in progress, and the immediate needs for carrying on the work.

Expenditures were authorized as follows: For Experiment Station, according to estimates presented from the Council, in Chemistry, \$70; in Horticulture, \$290; in Botany, \$125; in Agriculture, \$290; and for general stationery and publications, \$175. From College funds, for classroom case, charts, etc., in Botany, \$12; for purchase of herd-books and records to perfect the series in the Farm Department, \$25. To the Committee on Grounds and Buildings was referred a proposition to introduce small water-motors for economy in running the printing press and lathes. Regent Hessian was appointed a Special Committee to contract with the city for water supply for the year 1890-91.

Upon recommendation of the Farm Committee, authority was given Professor Georgeson to sell from the herd thirteen Shorthorn cows and heifers, named, three yearling Shorthorn bulls, six Jersey cows and heifers, and the Polled Angus bull, with the privilege of purchasing with the proceeds a trio of Holstein cattle and a trio of Shropshire sheep. He was also authorized to exchange a large gray horse for a team, if possible, and to kill the old white horse, now useless. Provision was made for selling the wheat now in storage, and using the proceeds for the purchase of corn. A site for a new piggery was selected with boundaries fixed.

The Faculty was authorized to expend through the Librarian the appropriation for additions to the library available in July next, and to issue six thousand copies of the College Catalogue, with several illustrations of grounds and buildings, exterior and interior, as may best serve to present the character of the work done here.

The recommendation of the Faculty that stu-

dents be admitted to College upon diplomas from common-school courses and certificates of city superintendents in Counties and States approved by the Faculty, as well as upon presentation of County certificates to teach, was approved. The recommendation from the Experiment Station Council as to the salaries of Assistants was laid over for consideration at the June meeting. Suggestions from the War Department, presented with a resolution from the Faculty, were carefully considered and approved with the exception of requirement of drill from all male students, as to which the Secretary was directed to present to the Secretary of War the experience of this College, and the unanimous judgment of the Board and Faculty. President Fairchild was authorized to give, to those interested, his judgment of the Morrill Bill for the increase of endowments for Agricultural Colleges, and to meet the annual tax of ten dollars for Colleges and Stations in the General Association.

The building of the walk to the Avenue, authorized in December last, was postponed for further consideration, on account of expense.

The expenditure of the appropriation for furniture was put in charge of President Fairchild, and the appropriation for Museum cases was referred to the President and Professor Kellerman for perfection of plans and construction.

The President of the College and the resident Regent were appointed a Committee to provide diplomas for the graduating class.

The petition of students for additional gymnasium facilities was referred to the Committee on Grounds and Buildings for consideration and report.

The petition of the Artillery Company for provision of special uniforms was referred back to the petitioners for the recommendation of the Professor of Military Science and the Faculty.

The Secretary of the Board was designated to accept the bonds to be filed by the newly elected Treasurer and Loan Commissioner.

After the usual auditing of bills and other routine business, the Board adjourned to meet June 10th, at nine o'clock A. M.

COLLEGE LIVE-STOCK FOR SALE.

We call the attention of our readers to the fact that the Board of Regents of the College have authorized the sale of a number of Shorthorns and Jerseys, from the College herd, which was deemed too large for the means of maintenance and the needs of the institution, numbering as it does upwards of 50 head. Among the Shorthorns offered for sale are thirteen cows and heifers and several very promising young bulls, all fine specimens of the breed that will prove valuable acquisitions to any herd. Here is a chance of getting some good foundation stock which breeders and admirers of good Shorthorns should not fail to improve. They will be sold at reasonable prices considering their breeding and individual merit. The cows have all been bred to Scottish Chief 89317, one of the finest Cruickshank bulls in the State, and the heifers offered are of his get. Several of the young cows are by the fine imported Cruickshank bull Thistleton, 83876, now in Colonel Harris's herd, Linwood, Kansas.

Among the Jerseys are several young cows, now getting into the prime of life, all of Herd-Book stock, which will be sold for \$75.00 each.

Persons who contemplate buying are cordially invited to visit the College and inspect the herd, and correspondence on the subject is solicited by the Professor of Agriculture, who will furnish all desired information in regard to prices and pedigrees.

GRADUATES AND FORMER STUDENTS.

Isabella R. Frisbie, student in 1887-8, is visiting her College friends this week.

P. H. Fairchild, '86, hangs out his modest "M. D." in Brooklyn, N. Y., this week.

O. L. Utter, '88, is spending a few days at the College refreshing his memory of class-room and library.

W. H. Olin, '89, will work in agriculture for the Station this summer, and probably continue special study in that line next year.

Lieut. Albert Todd, '72, leaves the Presidio, San Francisco, with his regiment on May 8th, en route for Fort Hamilton, New York, where he is to be stationed hereafter. Many friends will mourn that he cannot leave the troops long enough to call at his old home on the way.

THE INDUSTRIALIST.

COLLEGE SOCIETIES.

SOCIETY HALL, April 26th.

After the initiation of J. E. Calvin, the Society listened to the debate, the most spirited one of the season. The question, "Resolved, That the Blair Educational Bill should not become a law," was affirmed by E. T. Martin and S. N. Chaffee, and denied by G. E. Stoker and H. W. Avery. Mr. Martin opened the discussion with the argument that the bill had never been asked for by any State, and that it would be a stain upon the records of any State to ask aid in such a manner; that the main object of this bill is to educate the colored population of the South. As to educating those previously enslaved, it is impossible, and for the rising generation the States themselves stand ready. The South is independent. It is making rapid strides in the education of its people, and asks no aid of other States. Mr. Stoker, upon the negative, spoke of the good not all going to the South, but to the eradicating of illiteracy in the North as well; of the relation of labor and capital to the percentage of illiteracy; and of the good that would be derived from the adoption of this bill. He said that this bill provides for the common school, and therefore should become a law, as upon the school depends the stability of our Government. He spoke also of the prevalence of ignorance in the South, and its hostility to our welfare as a nation. Mr. Chaffee, second on the affirmative, acknowledged the illiteracy of the South. But have not other States educated their people by their own efforts, and cannot the South do the same? The question as to what they were doing during the years of slave labor bears on the question. They had then a chance to educate themselves and the negro race, but they did not do it. The war took away their slaves and left them in a helpless, but not hopeless, condition. He then spoke of their unlimited resources, and of their present progress in all lines of industry and education, and drew the conclusion that to offer aid to such a people would be an insult to their present work. Mr. Avery denied that the object of this bill was to confer a gift on the people of the South. "It is an appropriation for the United States," said he. "We are interested in the cause of education in the South, however. The South has levied to her utmost. She has not recovered from the shock received in the late war. She needs help, and we, as sister States, should give her aid." He spoke of the inter-dependence of the States, and the retarding influence of an illiterate portion upon our progress in civilization. He said that the South is without schools and school advantages, and then showed that, as he had before asserted, the appropriation would meet the growing percentage of illiteracy, not only in the South, but in every State in the Union. In closing the debate, Mr. Martin spoke of the bill as to the doubtful nature of its constitutionality and of the tendency of national appropriation to the several States toward centralization and monarchy. "If we begin to appropriate for such purposes, where will we end? The South is rich, active, and progressive. They do not need such aid, and they do not ask it. So long as they are able to aid themselves, we should leave them alone." Mr. Stoker denied the unconstitutionality of the bill. "The promotion of the general welfare," said he, "is the most important object of the constitution. This bill is for that purpose. We appropriate for army and navy, for rivers and harbors, for Indians, and for pensions—all for the protection and the welfare of our people. But we question a bill for educational purposes—we question a bill whose aim is to lift us to a higher plane—to blot out illiteracy from the land. The time for which this appropriation is made will educate a generation, and give an impetus to our growing civilization." The Society decided 21 to 19 in favor of the negative. "The advantages of 'P. M.' were then presented in an essay by J. W. Hartley. "The Suez Canal," presented by E. M. S. Curtis, was a well-written, interesting, and instructive article. C. J. Dobbs then presented an unusually interesting and amusing *Reporter*, after which, and the usual parliamentary drill, the Society adjourned at 10:40 P. M. WIMER.

HAMILTON HALL, April 27th.

President Cranston called the Society to order, Secretary Johnson called the roll, and Professor Olin led in prayer. The reading of the minutes was followed by A. E. Martin's declamation, "Henry of Navarre." H. B. Gilstrap read an essay entitled "The Santa Fe Trail." Then came the debate. "Should we adopt the Australian ballot system?" was the question discussed. The first speaker was S. VanBlercom, and after discussing the need of a ballot reform, he spoke of the history and advantages of the new system. In 1857, it was introduced in Australia, and it has now been adopted in seven of our States. The greatest advantage is the secrecy secured to the voter. The tickets are printed by the Government, and are so distributed that no man knows how another votes. The political worker knows that a man who can be bribed will also lack the honor to keep his agreement as to how he will vote, and so the money power will be greatly diminished. It will be necessary for each voter to know the candidates, for he must make his selection without consultation. H. E. Moore thought it would be no improvement, for a dishonest officer or a scheming politician could conduct cheating on a large scale. The expense of elections would be increased, for this system would require more room and a larger force of election officers. It would require more time from each voter, and the illiterate would find it almost impossible to vote as they wish to. Coleman, the second speaker on the affirmative, argued that the difficulty of buying votes would remove many other objectionable features from the polls. C. H. Houser continued the discussion on the negative, after which the arguments for the affirmative were carefully reviewed by Mr. VanBlercom. He said that if the State printed the ballots, the making of duplicates would be a species of forgery, punishable by law. That class of voters who do not select their candidates till they reach the voting place would be excluded by the necessity of independent action. Mr. Moore called attention to the fact that the system is still new, and that before it could be used long the ingenuity of political schemers would devise methods of casting fraudulent votes. The Judges were Messrs. Newman, Olin, and Rudy, and they decided in favor of the affirmative. Music, a quartette, "The Jasper Sea," Messrs. Anderson, Campbell, Town, and Yeoman, Professor Olin was then introduced, and he addressed the Society for a few minutes. He said that on the walls of the temple of Apollo were written the sayings of seven wise men. One of these, the advice of Solon, was "Know Thyself." If we would learn the secret of individual success, we must take the saying of Solon as our guide, and study mankind. As we do, we shall find that there is in man a force, by whatever name it may be called, that controls all his actions. To have this force under your control, is one of the essentials of success. We shall also find that success depends upon integrity. It is worth every thing to you to have it known that you are honest. A third element is balance, that quality which distinguishes the successful man from the laggard, or the one who rushes blindly into every new enterprise. Another is the reserve force in a man, that which corresponds to the reserve in an army. It is obtained by diligent and exhaustive study, and the effort put forth in its accumulation is never lost. Our circumstances, also, are important. We must learn that we cannot control natural forces, but we may provide channels through which they may act. Finally, we must look ahead. There is true philosophy in the saying that we must ignore the past, and we should believe that there is "a good time coming." W. J. Town reviewed the news of the week, after which S. I. Borton gave his oration, "The Career of Prince Eugene." J. D. Riddell's declamation was "The Civilization of Africa." The programme was closed by an instrumental selection, rendered by Messrs. Balderston, Campbell, Coburn, Downing, Smith, and Waugh.

SOCIETY HALL, April 25th.

The Alpha Beta Society began the usual exercises with music, an instrumental selection by Maud Parker; May Secret, music committee. Devotion, led by Christine Corlett. Roll-call. G. A. Grating was initiated, after which an essay was read by J. A. Zimmerman, and G. A. Browning read a selection. The question for discussion was whether or not our rhetoricals should be connected with the Societies and under the charge of a Professor. G. L. Clothier was the first speaker on the affirmative. He thought it would be better if they were, as then every person in College would be a member of some Society; and, by thus combining, more time would be gained for preparation. One good oration was worth great many half prepared. We would take more pains with the Society work. When he finished, Miss Clark argued the negative side of the question. She said we should be thrown on our responsibility, and the Society was just the place to get this drill. We ought to learn to rely on ourselves, whereas, if the Professor had charge of the speaking, there would be less independent thought and action, and instead of having less rhetorical work in College we should have more. The Society offers a broad field, and each one can find out what line of work he can do best.

Maggie Secret continued the affirmative. If a Professor had charge of the work, we would not have to learn over what we had learned in Society, as then we would have right to commence with. If our rhetorical work was connected with the Society, we would be able to enter the State and inter-State Oratorical Contests with other State institutions. She gave several examples where the Societies do take part, and in every case the students make better speakers, as there is a rivalry which stirs their ambition. John Orr continued the negative. He considered the change would be detrimental to both the class and the Society. We would have no originality, and it would finally run into routine work. He thought that the students of this College

would not be able to compete with those who have had the advantages of several years of training before they enter those Colleges. Mr. Clothier closed the affirmative, and Miss Clark the negative. The Judges, Messrs. Coleman, Town, and Reed, decided in favor of the negative. Miss Newell read the *Gleaner*. Recess. Upon again being called to order, the Society began with congregational singing. Newsman's report. The President then called for informal speeches from Messrs. Gilkinson and Donahue. Miss Senn asked the Society to discuss the question whether the prayer at the beginning of the exercises should be omitted. The majority were not in favor of a change. Report of committees. Consideration of old and new business. Assignment of duties. Closed with music. J. M. S.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

EDUCATIONAL MEETINGS.

Ellis and Russell County Teachers, Russell, May 19th. Agricultural College Commencement, June 7th to 10th. Kansas High School Superintendents, Topeka, May 9th. Annual School Meeting, July 13th. Social Science Club of Kansas and Western Missouri, Tenth Annual Meeting, Lawrence, May 8th and 9th. Annual Convention of County Superintendents, Hutchinson, May 13th, 14th, and 15th. Ottawa Chautauqua Assembly, June 17th to 27th.

The Board of Regents of the State University have voted \$300 toward fitting up the athletic grounds.

Mr. Olin Templin, formerly Assistant Professor of Mathematics at the State University, was made Associate Professor of Philosophy at a salary of \$1,200 a year.

The State Board of Education has prepared a new course of study for County Normal Institutes. The manuscript is in the hands of the printer, and the course will be ready for distribution in a short time.

An Ottawa exchange says: "Our campus, considered almost the finest in the State, has been rapidly improving under the judicious management of Professor Ward, and will show to the fullest advantage when the new building is erected."

The annual oration of the State University Commencement will be delivered by Colonel John J. McCook, of New York City, who is reputed to be a very successful lawyer and a brilliant orator. The baccalaureate sermon well be given by Rev. Joseph T. Duryea, of Omaha, formerly a pulpit orator of Boston. Both are Princeton men.

Work is progressing satisfactorily on the building of the State Industrial School for Girls at Beloit. The contractors are at work on the second story. It is expected the walls will be up early in July, and that the structure will be ready for occupancy by the middle of August or early in September. The building will be 66x100 feet, with four floors. There are fifty scholars attending the school now, which will be largely increased when the new building can be occupied.

The laying of the corner stone, at Lawrence, of the new high school building was performed with Masonic ceremonies in presence of 2,000 school children and a large assemblage of citizens. Regent Spangler and Chancellor Snow, of the State University, delivered the orations. The building, when completed, will be the largest high school building in the State. It is intended by the citizens of Lawrence to make their high school a kind of a State preparatory for the University.

The Junction City *Union* of last week publishes a carefully prepared article on the public schools of that city, from which we glean that but few cities in the State have a better organized and better equipped system of public instruction. There are eighteen teachers employed to teach 1,008 pupils, in three buildings. As has been observed elsewhere, the absence of a so-called college has had a very beneficial influence on the high school, and placed it in the front rank of such institutions in the State. With the *Union*, we think the teachers' salaries inadequate to permanently retain the best teachers.

The Russell School *Signal* makes the following timely suggestion: "Begin now to get ready for next school year. Have your teacher leave with the clerk a written statement of what should be presented at the annual meeting to improve the efficiency of your next year's school, and as a Board meet together and map out the work to be done at your annual meeting. Put your school on a higher plane of excellence, next year. A district, in order to secure a good teacher and run a six-months' school, requires at least a valuation of \$15,000. This will give at 20 mills on the dollar, the highest limit allowed by the school law, the sum of \$300."

Effort is being made on the part of the students of a number of Kansas colleges for the organization of a new State oratorical association. The present organization includes seven colleges, and it is as large as it can practically be. The other

institutions of the State take a lively interest in oratorical matters, and as they cannot become connected with the old association they propose to organize another, which will include the following institutions: Lane University, Lecompton; Southwestern College, Winfield; Garfield College, Wichita; Midland College, Atchison; Lindsborg College, Lindsborg; Highland College, and the State Agricultural College.

Among the other good things done at the last meeting of the Board of Regents of the State Normal School, was the adoption of a resolution declaring that the tenure of persons elected to positions in the Faculty should hold until terminated by an affirmative vote of the Board. This is a great step in advance of the old method of re-electing, or failing to re-elect, each year, and gives assurance of permanency which is due the profession throughout the State. Several cities have adopted similar provisions, and the movement ought to be made all along the line. Emporia places on the permanent list all teachers who have done satisfactory work for three successive years.—*Normal Quarterly*.

KINDRED INSTITUTIONS.

The Second Annual Report of the Maryland Experiment Station contains, besides the reports of the various officers of the Station, miscellaneous chapters upon "The Tomato," "The Sorghum Field," "Losses in Growing Wheat," etc., in all 158 pages.

Bulletin No. 6, of the New Hampshire Station, reports upon the "Effect of Food upon Milk."

The catalogue of Washburn College, Topeka, for 1899-1900, is just received and makes a creditable showing for that institution. A total of 293 students were enrolled during the year.

Bulletins from the Imperial College of Agriculture and Dendrology, Tokio, Japan, have been received as follows: No. 1 by C. C. Georgeson, upon "Fertilizer Experiments with Rice"; No. 4, "Composition of Several Japanese Fertilizers"; No. 5, "The Distribution of Nutrients over Products Obtained from Rice by Whitening"; No. 9, "Manufacture and Composition of Miso," all by Dr. O. Kellner; and No. 7, "Researches on the manufacture of various kinds of Tea," by Y. Koza.

No. 2, Vol. 3, second series of the Bulletins of the Ohio Station is devoted to "Commercial Fertilizers."

The Second Annual Report of the Delaware Experiment Station contains 195 pages of well-arranged matter showing results of the past year's work by its various officers.

The Hatch Experiment Station of Massachusetts reports, in its Bulletin No. 8, upon "Experiments in Green-house Heating," "Observations on Peach Yellow," and "Tuberculosis as a dangerous element in milk for Human Food."

"Charbon" is the subject of Bulletin No. 11, of the Mississippi Experiment Station.

The Second Annual Report of the Mississippi Station is a pamphlet of 44 pages only, the details of the work done in the various departments being shown in the six bulletins issued during the year.

The proceedings of the Fourth Annual Session of the State Agricultural Society of Louisiana make a well-arranged pamphlet of 80 pages, most of which are occupied with the papers and discussions presented at that session.

Statistician Dodge, of the U. S. Department of Agriculture, devotes his report No. 71 to the "Distribution and Consumption of Wheat," and "Freight Rates of Transportation Companies."

Bulletin No. 10, of the Missouri Experiment Station, shows results of "Analysis of Apples at various Stages of Growth," "Bordeaux mixture for Grape Rot," and "Comparative tests of Small Fruits and Potatoes."

"The Monthly Bulletin," No. 10, issued by the Rhode Island State Board of Health, contains a number of articles relating to health and disease, together with a monthly meteorological report and a monthly mortality report for the State.

INDUSTRIAL TRAINING.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have Farming, Gardening and Fruit-growing, Carpentry, Cabinet-making, Iron-work, Printing, or Telegraphy. Young women may take Sewing, Printing, Telegraphy, Floriculture, or Music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second year and the fall term of the third year, upon the farm, gardens, and orchards. Young women take their industrials for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen, the store, and laundry.

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R. ALLINGHAM, dealer in Fresh and Salt Meats. Special attention to student trade. Goods delivered free.

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GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week-day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 p. m., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

FEEDING VALUE OF KAFFIR CORN.

BY PROF. C. C. GEORGESON.

THERE are already two points established in favor of Kaffir corn: First, it is a heavy yielder, producing on an average about sixty bushels of grain to the acre, and more under favorable circumstances. Second, it will mature a crop of grain in dry regions where the rainfall is not always sufficient to develop a crop of corn. For this reason it is especially appreciated in Western Kansas, where the corn crop, to say the least, is uncertain.

So far it is well. But a question arises concerning the feeding value of the grain. Though it is possible to raise large crops where corn fails, has the grain sufficient nutritive value to take the place of corn as a food for stock? To obtain an answer to this question, at least so far as to indicate in what direction the facts point, two feeding experiments with pigs were undertaken with a quantity of the grain grown on the farm last year, the results of which are given below. They go far, I think, toward establishing the third and very important point in its favor, viz., that it can be used as a substitute for corn with good results.

Kaffir corn is somewhat intermediate in growth between corn and sorghum. It produces an upright panicle, or head, and white seed about the size of sorghum seed, but the grain is more rounded than grains of sorghum. It has a thin hull and a pleasant, sweet, starchy taste, without the astringency and bitterness characteristic of brown sorghum seed. I am indebted to Prof. Failyer, Chemist to the Station, for the accompanying table, which gives its composition in comparison with other feeding stuffs of similar nature. It will be noticed that its composition is almost identical with that of corn, and that it has the same nutritive ratio:

	IN THE DRY SUBSTANCE.			Albuminoid Ratio.		
	Corn	Seed,	White	Nitrogen not in	Amino-acids.	Nitrogen not in
Kaffir Corn	91.42	1.78	2.95	1.35	1.68	1.98
Seed, white	8.58	88.39	1.68	2.93	1.02	1.41
Sorghum	11.61	89.18	1.90	2.60	1.18	1.97
Seed.	10.82	89.02	1.69	2.65	1.05	1.85
Corn Chop	9.78	90.22	3.10	2.69	18.65	4.15
Shorts.					71.98	2.89
					2.33	.56
					14.56	1.539

In Experiment No I, the pigs used were about nine months old, having been farrowed early in April, 1889. Four pigs were selected, and these divided into two lots as nearly even in size and weight as possible, and they were fed equally for a week previous to beginning the experiment.

The facts of the experiment are here shown:

EXPERIMENT NO. I.—Jan. 27th to Feb. 10th.

	WEIGHT, LBS.	Feb. 27.	Feb. 10.	Gain in two weeks,	Feed consumed, lbs.	Feed consumed for each pound of increase, lbs.
Lot 1, Kaffir Corn Meal	355	398	43	240	5.5	
Lot 2, Corn Meal	344	372	28	207	7.4	

Here there is a decided showing in favor of Kaffir corn. The pigs got nothing but Kaffir corn-meal and corn-meal respectively, stirred in sufficient water to make it semi-fluid. They proved to be such greedy feeders that it became impracticable to continue the experiment longer for want of Kaffir corn. But it established the fact that for pigs of their age it is equal, if not superior, to corn-meal.

It is otherwise with the small pigs, which were fed in Experiment No. II. Though in that case also, it gave better results during the first period than corn-meal, the very slight increase for the feed consumed goes to prove the correctness of the long ago well-established fact, that to thrive well young pigs require a much narrower nutritive ratio than do older ones. By referring to the table giving the chemical composition of both feeds, it will be seen that the nutritive ratio of both is about as 1:7.5, when for pigs of that age it ought to have been about as 1:5. This fact was not ignored; but it was, nevertheless, thought best to give them nothing during the first period but the Kaffir corn-meal and corn-meal, respectively, in order to compare their effects on the young pigs, and it will be seen that here also the Kaffir corn was ahead. During the second period, the feed was enriched equally for the two lots by the addition of 25 per cent shorts.

Eight pigs were selected for this experiment, divided into two lots as before, four in each, the two lots weighing exactly alike Jan. 27th, when the experiment began.

They were weighed weekly, but intermediate weights are not given in this brief account.

EXPERIMENT NO. II.—First Period,—Jan. 27th to Feb. 17th.

	WEIGHT, LBS.,	Jan. 27.	Feb. 17.	Gain in three weeks, lbs.	Feed consumed, lbs.	Feed consumed for each pound of increase, lbs.
Lot 1 (four pigs), Kaffir Corn Meal	272	291	19	293	15.4	
Lot 2 (four pigs), Corn Meal	272	282	10	269	26.9	

Second Period,—Feb. 17th to April 21st.

	WEIGHT, LBS.	Feb. 17.	Apr. 21.	Gain in nine weeks, lbs.	Kaffir Corn. Shorts.	Corn Meal. Shorts.	Feed consumed for each pound of increase, lbs.
Lot 1, Kaffir Corn and Shorts	291	419	128	631	209	840	6.5
Total Feed							
Lot 2, Corn Meal and Shorts	282	436	154		642	214	5.5
Total Feed					856		

In the second period, the corn meal and shorts proved somewhat more effective than the Kaffir corn, but the increase from the latter is sufficient to show that pigs will thrive on it, even under unfavorable circumstances.

I may explain for the benefit of those who do not appreciate the drawbacks encountered in experimenting compared with ordinary feeding, as well as in extenuation of the small gains made by all the pigs for the feed consumed, that the first part of both experiments was interfered with by the very cold weather. The feed would frequently freeze in the troughs before it was eaten, and, unavoidably, part of it was wasted, inasmuch as what was frozen was mixed with a variable amount of water (or ice), and it was therefore impracticable to weigh it, and deduct it from the amount fed.

Again, to prevent the pigs from rooting and picking up food in the yards, they had to be confined strictly to the pens, and these proved dark and cold, and did not allow room for sufficient exercise. These facts, taken with the inevitable lack of variation in the food, caused the pigs in the second experiment to lose appetite in the begin-

ning and become somewhat stunted, from which they never recovered.

The conclusions to be drawn from these experiments are that the feeding value of Kaffir corn-meal is, on the whole, equal to that of corn-meal, and that for half-grown pigs it may even be a little better. Farmers who have doubted its value as a feed can plant this grain with the assurance that it can be profitably utilized as feed.

MOVE THEM TO THE REAR.

BY PROF. J. D. WALTERS.

AMONG the many causes of poor streets and pavements in cities of all stages of growth, none, perhaps, are more troublesome to the road-master or street engineer, and more annoying to all concerned, than the everlasting tearing up and refilling of ditches for the purpose of making or repairing connections with water or gas mains and sewers. Not only is there a temporary interruption of communication pending the work of putting in the connection, but the surface of a newly filled trench will settle for several years, no matter how firmly the soil has been tamped back nor how carefully it has been flushed with water during the filling process.

To obviate this difficulty, many plans have been proposed. Large cities have commenced to build the street-sewers of such a size that a number of water and gas mains and several electric cables can easily be suspended near the center of the arch, and leave enough space for all the rain water and waste material to pass. Branch lines leading to the buildings on both sides of the street are laid by boring two-inch holes laterally through the soil from the cellars. It is evident, however, that smaller towns cannot construct such a costly system of sewer mains.

A good deal might be done, though, in obviating this difficulty by placing all water and gas mains in the alleys instead of in the main streets. In a majority of cases, it would greatly lessen the expense of digging and filling in, while it would not lengthen the connecting lines, since the rooms where the water is used are mostly in the rear of the buildings.

In towns of less than 15,000 inhabitants which are built on an incline, few sewers are constructed, as a rule. The cesspool and the dry vault take care of the sewage, while the surface water is drained off by means of paved gutters located on both sides of the streets. By a very little effort all this water might be taken down through the alleys, leaving the streets in good condition, even during rainy spells. Where the incline is considerable, these alleys could be flushed from the water-works once a week without much expense. The electric light cable and the telegraph and telephone lines, too, should be located along the alleys, and everything should be done to keep the streets free from all interference pening the erection of new buildings. There is no reason why stone and sand piles should disgrace the streets of any city, even for a day.

This matter seems so self-evident and simple that it is hard to see why it should not have been made a rule and lived up to long ago. Clean and decent streets should come before ornamental squares and city parks and fountains every time.

SCIENCE AND PRACTICE.

Now, there is no conflict between theory and practice, and the successful farmer who is a theorist without knowing it, would be a better farmer if he had more science. He does not need to abandon the habit of reasoning, for it is the best mental habit he could acquire. He does not need more facts to reason from. What he is discovering in his crude ways and with his unaided senses has been established with microscopes and delicate instruments of weight and measurement by men of disciplined faculty and trained judgment. Why should not the farmer take a step forward and rea-

son from a thousand facts which these men of science have established for him, instead of reasoning on the limited number of facts which have come under his own narrow observation.—*Philadelphia Press*.

BETTER PLANNING FOR FARMING.

Farmers are now waking up; and while they are casting their bewildered eyes around them, knowing that something is wrong, but not being able exactly to locate it, I would remind them that before any legislation they may be able to secure can help them much, they must learn to conduct their business on regular business principles. What would be thought of a merchant who would continue year after year to lay in a supply of goods which he is obliged year after year to sell at cost, or below cost? He might do it once, but the second time he would be cautious. Yet the farmer goes on year after year laying in the usual supply, and year after year is losing money. The secret of the merchant's success is in buying at the lowest price just what his customers want, and then proceeding to furnish the supply, at the lowest price possible, and in such quantities as the world wants. Farmers may control the price of their products much as the merchant does his—not by seeking to control the movement to market of an over-supply of farm products, but by controlling the area planted to crops. The manufacturer, whose goods, for want of a profitable market, pile up in large quantities, does not throw his goods on the market year after year at a loss, and continue to run at full capacity. He either closes down, waiting until his surplus products can be disposed of at a reasonable profit, or reduces the productive force of the mill. Why should not the farmer do business in the same way?

If the present upheaving in the agricultural world does not result in the evolution of some plan by which the farmers of our country may learn to conduct their business in an intelligent and business-like way, it has been, to a large extent, a failure. In that plan should be embodied an estimate of the amount of wheat, corn, beef, and pork needed for consumption in the United States, and the price at which we could afford to export any given product. It should provide for a reduction of area in some crops—for instance, wheat and corn—and for an expansion of area in others, as flax, broomcorn, etc.; growing all the products adapted to our soil and climate which are now largely imported, such as sugar, molasses, silk, fiber, etc.; encouraging the wider distribution of the manufacturing industries of our country with a view to bringing products and consumers more closely together, and thus saving the cost of transportation. In short, a plan providing for the restoration of a just equilibrium of agriculture and manufacturing industries, which will be mutually beneficial, and will tend to promote in the highest degree the prosperity of all classes of our people. Yes, a plan we want that aims to make the American nation as independent as is consistent with its highest interests, of all other nations of the world.—*From Quarterly Report of Secretary Kansas Board of Agriculture.*

ASPARAGUS IN THE GARDEN.

The best possible plan for a garden plantation of asparagus is to have it in a single row parallel with the other varieties of vegetables and at one side. If the soil is fitted to grow a large crop of any other vegetable, it is good enough for asparagus. No special preparation is required, but it should be remembered that asparagus, although not a deep grower, is a gross feeder within the area upon which it draws its sustenance. It reaches further sidewise than in depth. Its feeding time is not confined to the gathering season, but extends through the growing year. Hence the application of fertilizers is always in order.

For the reception of the plants, which should be strong yearlings, a trench or furrow should be made wide enough to admit the plants and the roots in their natural position, and of sufficient depth that the crowns of the plants, when in position, shall be six inches beneath the level of the surface of the garden, and three feet apart in the row. If two inches of earth are drawn over the plants and well firmed down about the roots, the remainder may be filled in gradually during the season of cultivation.

This row of plants will utilize the ground five feet on either side, and in a few years will have crowns a foot in diameter.—*Chas. W. Garfield, before the Michigan State Horticultural Society.*

KANSAS THRIFT.

Many farmers in southeastern Kansas will plant cotton this spring. They want to test the question of whether it can be made a paying crop.

Plans have been made to erect an extensive plant at Topeka to manufacture railway frogs, car wheels, and general railroad supplies, in a short time. A capital of \$200,000 is said to have been subscribed.

Dr. Buck, of the silk station at Peabody, says that cocoons produced in Kansas are superior in strength and fiber to those produced elsewhere in this country, and that they command 50 cents more on the pound.

The ideal Kansas farmer is the one who can get along with mighty little cash. He raises his own flour, potatoes, meat, and cabbage, makes his own butter, and is independent of trusts and combines. The nearer the farmers approach to this ideal the more independent they are.—*Salina Republican*.

The Department of Agriculture defines the sugar belt of Kansas as being between Medicine Lodge and Wichita, and says that mills should not be built further south and west than Medicine Lodge, nor further north than Wichita. It warns communities not to vote bonds for aid under any circumstances.

The salt field of Kansas is now occupied by 51 pans—38 of which are built for the direct heat and 13 for steam, or grainer process. Of the former, only about half are operating or in a position to operate and only one third of the latter. There are 22 salt companies owning plants in the State, many of them being crippled in output from lack of operating capital, in proportion as above indicated.

Capt. J. E. Greer, of Rutland, came in last week from Kansas City, where he had been marketing 100 head of fat steers of his own feeding, and the hogs which had been fed with them—and his check called for several thousand dollars. Not many years ago, the Captain came to our County, practically a bankrupt, but by farming, trading, feeding, etc., he has earned other dollars, and now owns 1,200 acres of land, with good home, fine barn, and lots of stock, and brought home from the proceeds of last year's crops, sold in fattened stock, enough to pay off every dollar of his indebtedness. Kansas farming has paid, is paying, and will pay. In no other latitude can crops be grown cheaper, or high-bred cattle, horses, and hogs produced at so low a cost. Kansas lands are cheap—never will be as cheap again—and now is the time for home-seekers to come and invest.—*Independence Tribune*.

RURAL TIES.

Poor health and advanced age are reasons commonly given for leaving the farm; its cares and labors are thought too heavy for feeble folk. But the country is the place for ill and aged people. If accustomed outdoor exercise is given up, fatal consequences are pretty sure to follow. Feeble farmers, if they have not wives, sons, or daughters to assist, may sell or rent part of their land. But the fact should be better understood that no other place or business furnishes as much light, healthful, and remunerative labor as the farm. Its—should be—ample garden, its full assortment of small fruits, its fowls, pigs, and calves, give large returns for light work; riding the reaper and the mower, with a spring seat underneath and a big umbrella overhead, if called hard work, would, if he heard it, make an old-time cradler mad in his grave.

Whoever expends on his farm home the thought, care, labor, and expense necessary to make it a fit abode for American freeman in this nineteenth century, will leave it with extreme regret, if compelled to leave. If he be anxious to change his residence, there is a reason to suppose he has omitted the most needful labor of his life—the fitting up of a house and furnishing it with fruits, flowers, and household conveniences and adornments, and whatever else will give pleasure and lighten labor. Farming and the farm are never distasteful to those who embrace its opportunities. Let every farmer make up his mind on the start to live and die on his farm, and then let it be his lifelong study and effort to make it of all the places on the earth the one where he wishes to live.—*Hugh T. Brooks, in New York Tribune*.

CALENDAR.

1889-90.

Fall Term—September 12th to December 20th.

Winter Term—January 7th to March 28th.

Spring Term—March 31st to June 11th.

June 11th, Commencement.

1890-91.

Fall Term—September 11th to December 19th.

TO SCHOOL OFFICERS.

The College Loan Commissioner has funds to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioners and the State Agricultural College. Address Jno. E. Hessian, Loan Commissioner, Manhattan, Kan.

LOCAL MATTERS.

Mr. E. J. Ganoung, of Plainville, was a visitor last week.

The College house on the hill is for rent at very moderate terms. Address the President.

The light frosts on Sunday, Monday, and Tuesday nights did no harm to the fruit or vegetables.

The Artillery Company wake the echoes of our hills on Friday afternoons in practice firing with blank cartridges.

An excellent magic lantern, or stereopticon, is among the recent orders for illustrative apparatus in physics and other sciences.

Mr. O'Brien, of Osage Mission, who is a large wheat-grower, was a visitor to the College and its wheat-fields on Friday afternoon.

Prof. Popenoe is arranging a pipe for convenience in supplying water to his new beds of over one hundred varieties of strawberries.

Mr. and Mrs. H. Cooper, and Mrs. Blythe, of Wildcat, were visitors at College Monday morning. Mrs. Blythe has two daughters here.

Prof. Kellerman and his Assistant are busy in the planting of the multitude of crossed varieties of corn experimented with in the past two years.

Mrs. Benight, who has been visiting for some weeks with her daughter, Mrs. Hood, left on Thursday for her home in Terre Haute, Indiana.

Prof. Popenoe has added a large book-case to his office fixtures in the Horticultural Laboratory by removal from his old quarters in Horticultural Hall.

President Fairchild attended a meeting of City Superintendents of Schools in Topeka today, in the interest of closer relations between the public schools and State institutions.

W. J. Burris, '87, has completed a successful year as Principal of the Leonardville schools, and after a vacation at Manhattan, will spend next year in special study at some eastern college.

The new forest plantation of this College is pronounced by the U. S. Commissioner of Forestry the most promising experiment in the region, and has gained compliments for Prof. Popenoe already.

One of the many cosy nooks on the grounds is the well-arranged flower-garden east of the greenhouses. Visitors at this time of the year find even more to admire there than in the greenhouses themselves.

The College Battalion gains each week in the ease with which it executes the various maneuvers. The parade ground is quite attractive on Tuesdays and Fridays between 12:10 and 1 o'clock P. M.

N. E. Odell, who has been employed on the farm for several months past, has gone this week to take a place in a livery stable at St. Joseph, Mo., where he has worked before. John F. Thompson takes his place here.

The photographer took a snap shot at the Cadets on Tuesday morning, as they were drawn up in battle array. It will doubtless be a long-remembered occasion to many of the boys, as being the only time they can boast of having been under fire.

The College Young Men's Christian Association received a visit last week from Mr. Barrett, of Campbell University, Holton, and Messrs. Mills and Clark, of Washburn College, Topeka. They added interest to the Saturday evening and Sunday meetings.

The Manhattan Horticultural Society held its quarterly meeting in Horticultural Hall last Thursday. A small but select gathering listened to papers from Mr. VanEveren and Mr. Baxter. This Society seems worthy of a more energetic

support than it gains from the many interested in fruit, flower, and forest culture.

The mother of C. A. Campbell, Third-year, and A. E. Campbell, First-year, died on Saturday last. Mrs. Campbell, as wife of Rev. Wm. Campbell, has long been known and loved in Manhattan, and keen sympathy is called out by her unexpected death. Her husband and children have many fellow mourners among neighbors and students who have felt her noble influence.

The Social of the Spring Term, last evening, called out nearly all the members of the large College family, and it seemed that each strived to outdo his neighbor in making the occasion worthy of the name. The evening's entertainment was largely added to by a varied exhibition by the Athletic Club, which proved a creditable effort. Two beautiful tableaux were also presented to the pleasure of the large audience. Ten o'clock came all too soon, but the warning bell was none the less readily responded to.

Several young men, "over twenty-one and under forty-five," among the students have been anxiously inquiring this week as to their duty to work out a poll-tax when warned by the road overseer. The majority found relief in the statement that, according to statute definition, one resides in the place to which he expects to return after his temporary business is over. A few, however, who have claimed a residence and exercised the privilege of voting, will respond like good men and true, to the call of the road overseer.

The fifth division of the Third-year Class entertained the Faculty and students yesterday afternoon by orations, as follows: "Teutonic Influence on Civilization," J. O. Morse; "A Noble Woman," Louie Reed; "An Ideal Empire," H. V. Rudy; "The Advantages of Ugliness," Carrie Stingley; "Combination Against Combination," Ben Skinner; "Resistance to New Ideas," Lillian St. John; "A Question of National Importance," F. A. Waugh; "Woman's Duty to Woman," Fannie Waugh; "Illiteracy in Voting," G. W. Wildin.

GRADUATES AND FORMER STUDENTS.

H. S. Willard, '88, is studying medicine with Dr. Robinson, of Manhattan.

E. J. Abell and R. C. Abell, both students in 1885-6, are visiting at the College this week.

O. L. Utter, '88, is likely to take a place in the Chilocco Industrial School for Indians, at Arkansas City, Kansas.

Inez M. Bishop, Second-year in 1882-3, is visiting at the College this week. Her home is at Glascow, Cloud County.

Alice S. Peckham Cordry, '82, whose home is in Belleville, is visiting this week in Manhattan, having a bright baby girl to exhibit to her many friends.

W. F. Klemp, Second-year in 1883-86, recently married to Miss Mary C. Lindenschmidt, of Topeka, sends a card, "After May 7th, at home, 2943, Hanover Street, Chicago."

S. S. Cobb, '89, sends from the office of *Our Brother in Red*, Muskogee, I. T., a neat bar docket for the United States Court, as well as other specimens of his handiwork.

The Manhattan *Republic* announces the marriage, on May 4th, at the residence of the bride's parents, two miles east of Manhattan, of Dudley C. Atkins, student in 1886-7, with Jessie McDonald, Third-year in 1883-4.

COLLEGE BUSINESS.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. Applications for extension of time on land contracts should be sent to the Secretary of the Board of Regents, at Manhattan.

The *INDUSTRIALIST* may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Kellerman, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study or work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

Applications for Farmers' Institutes should be addressed, as early in the season as possible, to the President.

The Experiment Station should be addressed through the Director.

THE WEATHER FOR APRIL.

BY ASST. CHEMIST C. M. BRESEE.

The mean temperature for the month of April, 1890, was 56.25°, which is 2.63° above the average of the record. There have been twenty-two cooler and nine warmer Aprils, the extremes being 46.00° in 1874, and 61.18° in 1863. The highest temperature for the month was 93°, on the 7th and 30th; the lowest, 26°, on the 1st, a range of 67°. The warmest day was the 7th, the mean temperature for the day being 73.25°. The coldest day was the 1st, the mean temperature being 39.75°. The greatest range for one day was 56°, on the 10th; the least, 3°, on the 3rd. The mean temperature of the observations at 7 A. M. was 48.8°; at 2 P. M., 66.866°; at 9 P. M., 54.66°. With the maximum thermometer the mean was 70.13°; with the minimum, 44.5°, the mean of these two being 57.315°.

The precipitation was 1.736 inches, while the average rainfall for April is 2.75 inches. The highest recorded rainfall for April is 9.12 inches, in 1863; the lowest, .12 inch, in 1860. The five rains were well distributed, but the scanty rainfall of February and March, combined with that of this month, leave the soil in a condition not the most favorable for growing crops unless the rains of May and June prove to be frequent and plentiful.

The mean barometer for the month was 28.909 inches: at 7 A. M., 28.934 inches; at 2 P. M., 28.895 inches; at 9 P. M., 28.899 inches. Maximum, 29.293 inches, at 7 A. M. on the 1st; minimum, 28.377 inches, at 9 P. M. on the 7th; monthly range, .916 inch.

There were three cloudless days, the 4th, 18th, and 29th; and five entirely cloudy ones, the 2nd, 15th, 16th, 24th, and 25th. Twelve days were at least two-thirds cloudy, and eighteen less than two-thirds cloudy.

The wind was from the east twenty-two times; southwest, nineteen times; northeast, ten times; north, ten times; west, ten times; southeast, six times; south, four times; northwest, four times, and a calm five times at the hour of observation. The total run of wind for the month was 9,483 miles. This gives a mean daily velocity of 316.1 miles, and a mean hourly velocity of 13.17 miles. The highest daily velocity was 710 miles on the 11th; the lowest, 103 miles on the 17th. The highest hourly velocity was 60 miles, at 6:30 P. M. on the 8th.

The table below gives a comparison with the preceding Aprils:—

April.	Number of Rains.	Rain in Inches.	Mean Temperature.	Maximum Temperature.	Minimum Temperature.	Mean Barometer.	Maximum Barometer.	Minimum Barometer.
1858	.....	4.44	52.50	90	22	.....	.....	.....
1859	7	2.54	49.43	90	30	.....	.....	.....
1860	2	.12	57.91	90	30	.....	.....	.....
1861	1	2.00	56.34	93	31	.....	.....	.....
1862	6	3.63	50.81	78	31	.....	.....	.....
1863	5	0.12	61.18	93	39	.....	.....	.....
1864	5	1.68	48.23	79	27	.....	.....	.....
1865	9	2.03	54.07	76	23	.....	.....	.....
1866	.....	.....	.....	.....	.....	.....	.....	.....
1867	3	2.44	50.03	75	31	.....	.....	.....
1868	7	1.96	49.55	83	27	29.10	28.15	28.40
1869	6	2.20	47.43	77	22	28.63	28.74	28.74
1870	5	.50	53.48	85	10	28.74	29.00	28.40
1871	8	3.00	59.97	91	32	.....	.....	.....
1872	2	0.06	56.63	89	30	.....	.....	.....
1873	9	1.67	47.80	91	23	.....	.....	.....
1874	3	1.40	46.00	84	24	28.75	29.14	28.33
1875	7	1.60	51.55	82	19	28.66	29.04	28.32
1876	5	7.52	55.60	84	30	28.71	29.16	28.36
1877	6	4.08	53.03	84	20	28.65	29.10	28.19
1878	5	2.02	57.77	81	27	28.50	28.95	27.98
1879	8	3.21	55.57	80	18	28.56	28.92	28.19
1880	2	1.08	50.34	89	32	28.54	29.02	27.88
1881	6	1.56	52.09	82	18	28.60	28.90	28.11
1882	7	3.47	56.14	86	32	28.59	28.99	28.14
1883	7	2.36	55.49	93	31	28.50	29.02	28.36
1884	12	3.23	49.27	85	27	28.65	29.01	28.11
1885	5	4.03	53.74	81	28	28.62	28.95	28.27
1886	5	5.26	53.73	88	18	28.84	29.26	28.37
1887	7	2.85	58.22	98	23	28.82	29.29	27.95
1888	6	1.38	56.72	93	28	29.10	29.53	28.64
1889	3	1.74	55.27	92	26	29.03	29.41	28.47
1890	5	1.74	56.25	93	26	28.91	29.29	28.38
Sum...	173	87.92	1715.84	2665.814	545.46	553.08	536.10	28.22
Mean...	6	2.75	53.62	86	26	28.71	29.11	28.22</

their breeding and individual merit. The cows have all been bred to Scottish Chief 89317, one of the finest Cruikshank bulls in the State, and the heifers offered are of his get. Several of the young cows are by the fine imported Cruikshank bull Thistletop, 83876, now in Colonel Harris's herd, Linwood, Kansas.

Among the Jerseys are several young cows, now getting into prime of life, all of Herd-Book stock, which will be sold for \$75.00 each.

Persons who contemplate buying are cordially invited to visit the College and inspect the herd, and correspondence on the subject is solicited by the Professor of Agriculture, who will furnish all desired information in regard to prices and pedigrees.

COLLEGE SOCIETIES.

SOCIETY HALL, May 2nd.

The Alpha Beta Society, upon being called to order, listened to a duet by the Misses Cottrell; Miss Corlett, organist. Prayer was offered by Martha Cottrell. Bertha Kimball read a selection entitled, "A Sewing Girl's Diary." For the debate, President Smith appointed Messrs. Rudy, Utter, and McAdams as Judges. The affirmative of the question, "Is it to the interest of all civilized nations to interfere with the treatment of Russian convicts?" was discussed by May Harmon and Mr. Gilkinson, while the negative was argued by Marie Senn and Mr. Gamble. Miss Harmon began by saying that we all should have pity for those convicts sent to Siberia on account of the unjust treatment which they receive as described by George Kennan. Many are sent for the most trivial offences, and the fact that the Russian Government authorizes such a system is no argument. We are all of one race, and we ought to see that none are unjustly oppressed. Miss Senn, the first speaker on the negative, said we should consider the principle of the question. We have no right to interfere with the government of another nation. We can give them our sympathy, but that is all. If we did interfere the change would not be permanent, as the nation must grow up to it. No doubt some are ill-treated, but in a great many cases it is not as bad as we hear. Let the people of that nation see the wrong for themselves and they cannot help but change. The affirmative was continued by Mr. Gilkinson, who thought that for the sake of humanity, if nothing more, we should interfere with the cruel treatment of the convicts. These people should attract our attention as well as the African savages. He gave some examples of the unjust banishments of the people, and the sufferings they undergo on their journey, and being so poor when they reach their destination they are put at the roughest kind of work. We should intercede for them, as many have not committed any crimes, but are only trying to help their country. The next speaker on the negative, Mr. Gamble, in answering some of the arguments presented by the affirmative, said if they do crowd their prisons that is no more than is done in this country. If we should interfere it would only cause trouble, and the downfall of Russia. Are there any more unjustly sent to Siberia than there are to our penitentiaries? Their hospitals are not more overcrowded than those of our own State. Miss Harmon closed the affirmative. We ought to investigate the subject; that certainly can do no harm. These people are not to be oppressed always, as sooner or later a revolution is sure to come, unless the nations interfere. The horrors of this exile system cannot last forever; those of the highest classes as well as the lowest are often sent without even the formality of a trial. Miss Senn, in closing the debate, said that the best treated people of today were once as badly treated as the Russian exiles. Every nation has a right to govern its own country, and would not take kindly to any interference from other nations. A revolution in that country would not be as bad as a revolution of the whole world, and as these convicts knew the laws of their country, and disobeyed them, we should let them alone. The Judges decided in favor of the negative. Miss Hoop read the *Gleaner*. Recess. Music by Miss McDonald and Messrs. Clothier, Thayer, and Conner. The newsman being absent, the Society devoted thirty minutes to extemporaneous speaking, Mr. Utter being one of the speakers. After a rather prolonged session, the Society adjourned at 5:30. J. M. S.

SOCIETY HALL, May 2nd.

The Ionian Society was called to order by Pres. Houghton. After the usual opening exercises of congregational singing, prayer, and roll-call, the Society turned its attention to the programme. Misses Eda and Bertha Hederstrom entertained the members with a beautiful duet. Following this was a select reading, "A Sweet Revenge," by Kate Pierce. Jennie Selby gave the Society a comic recitation, which was well received. The *Oracle* was presented by Lizzie Meyers. Motto: "Take the dust off thy brain." The paper contained many interesting articles; one concerning the motto which was chosen last year by the Society, "Diamond cut Diamond." A poem, "Crowning the Queen," a description of the first scene in the Historic presentation at the exhibition; "Advantages of being a 'Prep,'" and many shorter pieces. Debate on the question, "Should the students have a voice in the government of the College?" Lottie Short opened the affirmative, followed by Myrtle Harrington on the negative. Miss Harrington thought that to attempt to please all was to please none. She pointed out the difficulties in forming the students into a legislative body and the time and thought it would take from class work. The experience of the students is not sufficient to guide them in the successful management of such an institution. It requires older and better educated men and women. The students would soon defeat the very object of the College. She was followed by Mary Pierce on the affirmative. Miss Pierce cited the principle that governed our forefathers when they framed the constitution, making the government by the people, of the people, and for the people. That the government derives its just powers from the governed. She showed how a republican form of government has been retained in all the States, and is the governing principle of the American people. The students, if allowed a voice in the government of the college, would be made to feel the responsibility resting upon them, and would gain in intelligence and capability for future usefulness as American citizens. Minnie Shaffer closed the negative by a racy talk in answer to arguments brought forward by the affirmative. The Judges, Alice Vail, Jennie Selby, and Julia Pearce, decided two to one in favor of the negative. The programme was closed by an instrumental trio, violin, piccolo, and organ, Misses Selby, Waugh, and Pearce. The Society spent some time in the usual routine of committee reports, old and new business, etc. An unanimous vote of thanks to the "Unknown Four" who presented the beautiful May basket to the Society was uproariously carried. It was decided to retain the basket, and present the flowers to the Society President. After discussions by the members on various topics, the Critic gave her report, the duties were assigned, and the Society adjourned. COR. SEC.

SOCIETY HALL, May 3rd.

The Websters were called to order by Pres. Davis, and after roll-call, B. H. Pugh led in devotion. Debate on the question, "Resolved, That the Roman Catholic religion is compatible with free institutions." Mr. Otis, the first speaker, spoke of the gross misrepresentation of the Catholic religion. He said that it furnishes Christian churches, Christian homes, and Christian schools, and has for its basis the belief that mental and moral culture is the end and aim of all true education. The fact that the Catholics are willing to submit to a double tax, is a proof of their support to free institutions. Mr. Reed, the second speaker, spoke of the opposition of Catholicism to very important reforms, and of great progress in Protestant countries; and also of the Catholics' antagonism to the laws of the land. The fact that they refuse to send their children to our public schools shows their opposition to our free institutions. In absence of Mr. Green, Mr. Stoker resumed the argument of the affirmative. All religions, said he, have for their object the teaching of the science of morals. How to live is the quest on they all ask. Catholic institutions stand on an equal footing with similar Protestant institutions. Catholicism is a growing power, and its stability is a proof that it is meeting the wants of the people, and therefore of its compatibility with free institutions. W. J. Taylor, after answering the arguments of the affirmative, dwelt upon the exclusiveness of the Catholic religion, after which D. H. Otis closed the debate on the affirmative. "The Catholic system of education," said he, "has been tested, and has not been found wanting. Their support of Church schools which do not antagonize our public schools, is compatible with our free institutions." Mr. Reed then closed the argument on the negative. After answering the arguments of the affirmative, he spoke of our free schools, and the growing influence of Catholicism in them; also of the increase in the number of

Catholic schools. The Society decided in favor of the affirmative. The Society then passed the remainder of the programme of the evening, and proceeded to transact unfinished and new business.

WIMER.

HAMILTON HALL, May 3rd. The debate was the first on the programme. The question, "Would a war in Europe be favorable to the interests of the United States?" was affirmed by A. E. Newman and W. E. Smith; denied by R. L. Wallis and C. Abbott. The Judges decided in favor of the negative. R. W. Newman then spoke a humorous selection, "The Dutchman's Telephone." The *Recorder* was edited and read by Clay Coburn. It contained an article on "Cruelty to Animals," one recounting the troubles of "Stick-in-the-Mud," directions for "Trading Bugs," "A Story of Plighted Love," "A Skunk Story," and an answer to the question, "What Are We Going to Do?" After a recess of ten minutes, the Society listened to a select reading by Mr. Staver. Music by Messrs. Smith, Abbott, and Coburn; Frank Yeoman, committee. Professor White then spoke upon "Gestures in Debate and Extemporaneous Speaking." All good speakers use gestures. A child naturally makes gestures, or the base-ball players, as they crowd around the umpire to argue their points, make very expressive gestures. When we learn that gestures are universal and essential, we are led to inquire if there are not some common principles underlying their use. It is a matter of imagination, and should be cultivated. We must try to see things as they actually appear, if we would make good gestures. Training in this line does not come amiss, but it must not be carried too far, making things appear as if they actually were there. As soon as we work out where our hands would naturally go in the actual case about which we are trying to excite the feelings, the gesture will come natural. Elocution may be defined as the art of speaking naturally when excited. We should be natural; the conversational style is more impressive than the declamatory. Mr. VanZile presented the news of the week, after which the assignment of duties was read, and the Society adjourned.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

EDUCATIONAL MEETINGS.

Ellis and Russell County Teachers, Russell, May 10th. Agricultural College Commencement, June 7th to 11th. Ottawa Chautauqua Assembly, June 17th to 27th. Annual Convention of County Superintendents, Hutchinson, May 13th, 14th, and 15th.

The Windom schools this year have graduated 13 pupils, or nearly 20 per cent of all graduated in McPherson County. All the grades were high.

Enterprise, Dickinson County, is erecting a \$12,000 building for a college or normal school of some kind in order to keep abreast with the times.

The April meeting of the Clay County teachers,—the last meeting of the school-year,—held at the Clay Center high-school building, was a grand success in every respect. State Superintendent Winans delivered the Friday evening address.

The Clay Center High School wins the *Youth's Companion* flag, for the best essay on "The Patriotic Influence of the American Flag, when raised over the Public Schools." Will L. Long is the name of the successful young essayist.

Baker University has added two years' study in the languages and sciences to its scientific course, making this of equal length and grade with the classical course. A determined effort will be made to obtain Professors and apparatus to equal the facilities of the scientific department of other institutions of like standing in classical work.

The School District officers of Pottawatomie County held a meeting at Westmoreland on April 28th for the purpose of considering matters pertaining to their official duties, such as the selection of the teacher, the proper condition of buildings and grounds, the supply of needed furniture and apparatus, and supervision of the school. The meeting was well attended.

The universities and colleges of the present day are not practical; the young man or young woman commits to memory what he finds in the books, but he is not taught to think for himself. The result is that when he goes out into the world he finds that he must unlearn about half he has acquired, for it is a hindrance to him instead of a help. What we want is a practical system of education—one that will teach young men and women to think for themselves and make men of ideas.—General Caldwell, in Topeka Capital.

The Kansas City Times says the following in regard to the Wyandotte County teachers examination: "The report of the examination for teachers shows thirty-six applicants. Of these, thirteen passed and twenty-three failed. There were five second grade, and eight third grade certificates issued. Of the twenty-three that failed to make the necessary grades, fifteen failed on theory and art of teaching, seven on physiology, six on arithmetic, five on grammar, spelling, penmanship, and history, three on United States Constitution and geography, and one on reading. Twelve persons failed on one branch only, four on two branches, and one person each, on four, five, six, eight, and nine branches, respectively. Now, we will admit that the questions were difficult, but that so many persons should fail on the same branch shows conclusively that study on that branch is neglected. The character of the answers given in a majority of the papers is atrocious. The penmanship, spelling, punctuation, and use of capitals would disgrace a 10-year-old school boy. There has been considerable criticism of the State Board of Education on account of the questions and, in some instances,

stances, justly, but that does not excuse a person who wishes to teach. Many who wish to enter the teaching profession think that as soon as they are in possession of a certificate, further study or intellectual effort is unnecessary. Therefore they do not try to improve, never attend county normal or teachers' institutes, and thus suffer themselves to fall behind. Then comes a failure to pass the examination, followed by a howl about the State Board of Education or the County Board of Examiners for being the cause of that failure, blaming every one but the right one. It is to be hoped that the results of this examination will be a lesson to the teachers of the county which they will heed."

The State Normal sends out this year a larger class than ever before. Fifty-three will be added to the already large force of graduates. This comes fully up to the high standard in point of appearance, scholarship, dignity, and strength. The average age of the class is twenty-two years, the youngest being seventeen years; the oldest, thirty-five. The average teaching experience is two years; the greatest number of years taught by any one, eight. Seven members hold first-grade certificates, six are graduates of high schools, and seven are graduates of other normals and colleges. Seven take the Latin course; three, the English; and forty-three, the Elementary. The officers of the class are Chester Culver, President; Myrtle Carpenter, Vice-president; Lizzie Smith, Secretary; M. L. Bishop, Treasurer.—*Normal Quarterly*.

The National Educational Association and Council of Education will hold their next Annual Convention at St. Paul, Minnesota, July 4th to 11th. It is expected that there will be twenty thousand teachers present from all points of the Union and Canada. The railroads have agreed to sell tickets to St. Paul and return for one lowest first-class single rate for round trip, plus \$2, membership fee. The most complete arrangements are being made to give the teachers a splendid welcome to the northwest, and to make the meeting a great success. There will be ample hotel accommodations at reasonable rates. Local excursions are being planned to the Lake region, Yellowstone Park, Canadian National Park, and all important points of interest in the Northwest and on the Pacific Coast. Among the prominent speakers to be present are Bishop Quintard, of Tennessee; Miss Frances Willard; Judge Gundy, of Louisiana; U. S. Senator Blair, New Hampshire; Dr. W. T. Harris, U. S. Commissioner of Education; Dr. Hancock, Ohio, and Rev. A. E. Winship, Boston. For a copy of the official bulletin, and all the particulars about rates, routes, entertainment, and programs, ask your railway ticket agent, or address the General Passenger Agent of the line you expect to go over, or address, S. Sherin, Secretary of St. Paul Executive Committee, Hotel Ryan, St. Paul, Minnesota.

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GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 p. m., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

SORGHUM SUGAR.

BY PROF. G. H. FAILYER.

THE question of making sugar from sorghum, with or without beets as an adjunct (possibly the sorghum will prove to be the adjunct), still receives ample attention. Towns and communities have often been induced by speculative individuals and venders of machinery to give substantial assistance in the erection of sugar works. Of course, it is always made clear that the enterprise will be immediately profitable, not only as an investment, but by reviving the waning boom in real estate, with which the place is afflicted. In view of the purely experimental state of the sorghum sugar industry, it has been difficult to see why there should have been any haste in going into the enterprise. It would seem that it is thought there is danger of being shut out if they do not get into the business at once.

The Chemical Division of the Department of Agriculture, which has done, and is still doing, much for the sorghum sugar enterprise, has recently issued one of its most important bulletins, No. 26. It is a "Record of Experiments in the Production of Sugar from Sorghum in 1889" over an area extending from New Jersey to Western Kansas; from Northern Iowa to Louisiana. The writer of the bulletin, Professor Wiley, taking the position neither of an enthusiast nor an alarmist, does plain talking and gives good advice. Some of the points may be reproduced here with profit. He cautions against bond voting by communities. It is a very doubtful way of aiding the industry by building factories by this means. There are already enough factories to test the matter. The effort should be to render the existing ones thoroughly successful. By this means, rather than by the multiplication of factories, will success come if it comes at all. Wait and let these have a fair trial. Failure has come in some cases from lack of plenty of water. It has been demonstrated that wells cannot be depended upon. It is time that it is realized that the region where success may be expected is limited. The great drawback is the shortness of the working season.

The cane must be thoroughly ripe for successful working, and the first sharp freeze injures it. The most successful work yet was at Medicine Lodge, in 1889. At places west of this it was too dry last year for the cane to make a good crop; and the past history of that section indicates that this will be a frequent experience. Cane has been injured by freezing in the northern portion of Kansas in the latter part of September and early part of October. This would shorten the season. At this time, while final success is so problematical, it would be well if the new ventures in sugar-making in Kansas were not further west than Medicine Lodge, nor further north than Wichita.

A proper adjustment of the machinery to give economy in working, nearness of the sorghum fields to the factory, cheap and abundant fuel, both technical and scientific skill in managing the factory, are points of vital importance. A proper attention to these matters would have given profit instead of loss in some cases in the past. The building of factories where any of the previously enumerated factors are unfavorable is a hindrance to the industry, rather than an aid; for the enterprise is almost sure to fail, and these failures have a very depressing effect.

In the above briefly worded and free interpretation of certain passages in the bulletin, are given the views that must be held by all conservative students of the history of this industry, unless, it may be, in regard to the geographical limits. It may be doubted whether the author speaks from

sufficient data, especially regarding the northern limit. However, the very cautious wording gives little room for criticism. He does not say in this bulletin that the sugar belt is confined to the territory south of Wichita and east of Medicine Lodge. Such a statement has been going the rounds of the papers. If such an announcement has been made by the Department, it must have been elsewhere. But it is distinctly said that this region offers the most favorable climatic conditions, and that other than culture experiments would better be confined to this most favorable section for the present. But, since the best success yet made was at Medicine Lodge, it is strange that this should be the extreme western limit. If there be a rapid falling off in the rainfall so that the crop cannot be made, this would be the case.

In favor of Wichita as the northern limit, it is mentioned that at Ft. Scott and Ottawa sorghum has been killed by frost about the first of October. We are not told how the frost, the same seasons, affected the more southern and western section. Cold waves have been known to come in from the northwest, killing vegetation in a northwest and southeast belt, while points to the north and east escape. But the occasionally shortened season at either place will not prevent success as a whole. The question is as to the greater number of years, granting always, of course, that the industry becomes established. But the advice to stop the erection of factories, and give support to those we now have, is timely.

COLLEGE EDUCATION FOR WOMEN.

BY PROF. O. E. OLIN.

A COMPARATIVELY few years ago the question of admitting women to equal privileges with men in the best colleges and universities was not thought worth serious consideration: there were, besides the mental inferiority of women, so many conclusive arguments against it, that college men did not think the matter worth debating.

It is interesting to trace the development of the idea of co-education and of college education for women till schools were opened, first as an experiment, then as an expediency, perhaps, and finally as an act of justice, till it has been shown that as the discipline of college work develops character and intellectual strength in young men, so it develops character and intellectual strength in young women also. The work has now gone on so far that it cannot stop till the highest colleges and universities of the world are open to both sexes on the same terms.

Already the question, so far as time and argument are concerned, is more than half settled. In our country, all the western universities and colleges of note admit women upon equal terms with men. The University of Kentucky and Columbian University, of Washington, opened their doors this year. Pennsylvania is making a beginning. Columbia, of New York, and Harvard have an official "Annex," where instruction is given by the same professors that lecture in the college proper. The only excuse that Brown University makes for not being so liberal is, that it will require the building of a new hall. These, with the excellent colleges for women, such as Vassar, Wellesley, and Bryn Mawr, give the women of the United States a fairly good opportunity to measure and develop their strength in the world of thought. The same advance is seen in other nations. In Canada, eight colleges and universities are open to women. In Australia, all the universities give equal opportunities to men and women. The same is true of the universities of Spain and of the seventeen universities of Italy. There are about two hundred women in the universities of Switzerland, half

of them taking the highest course. In France, the University of Paris admits women, as do also many schools of high grade throughout the republic. Germany is thinking about it; but does no more as yet than to sanction the employment of women as teachers in the schools. England is becoming liberal in providing educational facilities for her daughters. Many colleges of highest rank are now provided for women only; women are admitted to the University of London, and all the examinations of Cambridge and Oxford are open to them, but without degrees or fellowships.

These advantages of the last twenty-five years have not been without direct results. I have no means of knowing the number of women who are taking collegiate training as compared with the number of men, but it must bear a respectable ratio. Aside from the benefit to those directly trained, there is a great gain from the inspiration and stimulus to society in every advance made. The quality and quantity of the work done in this short time has been most satisfactory to the friends of unlimited education. In some notable gatherings for consideration of weighty subjects, women have held equal rank with men, while their contributions to higher literature show broadening views and deeper research. E. W. Bok, in the *Boston Journal*, says:—

"Women are more and more forging ahead in authorship, and it is astonishing to note the large percentage of manuscripts sent to the magazines written by feminine pens. I was talking on this point to a magazine editor a few days ago, and he said: 'Fully two-thirds of our manuscripts during the past year came from women, and their work was of a higher grade than ever before. Of course, there is an endless amount of trash, but I really think I have begun to look more to women than to men of late for actual good work, and women are becoming more versatile in their writing.'"

As to the kind of work done in college, I find the following in a late periodical: "Professor Palmer, of the Harvard philosophical department, who teaches both in the College and the Annex for young women, has publicly said that he has to prepare his lessons better for the Annex than for the College, for the young women are sharper questioners than the young men. Professor Charles Eliot Norton has told his college students that they do not pass so good examinations as the women; and even a Greek professor bears the same testimony."

Civil Service and other competitive examinations, and college statistics are doing much to destroy faith in the inferiority of either sex or race. Certainly those who have argued so logically upon the "mental inferiority of women" must explain some things soon, or themselves perform some intellectual feat that is so far ahead of anything a woman has done as to put the matter beyond question.

CANNED MEATS.

"Will you please explain the modus operandi of canning meat in the great canning establishments at the Union Stock Yards?" asks a correspondent.

Cattle killed for canning are usually well fattened native cows, and Texas and other range cattle, such as are usually ranked in the market as good butchering cattle. Corned beef, after being first salted and cured in the chill-room, at a temperature of thirty-eight degrees Fahrenheit, is taken over to the cannery and cooked by steam in hot water. It is then put upon the chopping-table and cut up. Hand labor is employed for this purpose, because it is necessary to select the parts of the beef that go into the cans, and to throw out the gristle and other unsuitable portions. The best cuts of table beef are selected for canning purposes. This process over, all the rest of the manipulation is done by machinery. The cans are placed in a receiver and are charged from the bottom. A steel plug or plunger presses the beef compactly into the cans. They are then weighed, and any shortage or overplus

is rectified. A circular orifice is left in the bottom of the can. Upon this a disc of tin plate, with a small hole in the center, is laid, overlapping the orifice, and firmly soldered around the rim leaving the little aperture in the middle still open. The cans are next placed in a steam bath for about thirty minutes, which creates a vacuum. As soon as the air is thus expelled from them, the remaining opening is quickly soldered, and the can is then air-tight, or should be so. Each can is tested by an expert, who ascertains by sounding if there is any defect. If so, it is thrown out, but if found perfect the cans are run through steam and washed in hot water to remove all grease from the outside, and are then plunged into a bath of cold water to collapse them. The only remaining process is the lacquering and labelling. This is done by girls and women.—*Western Rural*.

FARM STATISTICS.

Many assessors throughout the State have written to Secretary Mohler that farmers are refusing to give statistics which the law requires them to take. They refuse to give this information for the reason, as they claim, that it is detrimental to the interests of the producing classes. Secretary Mohler has addressed a letter to all the assessors, in which he says:—

"The farmers, no doubt, are honest, but they are wrong in the position they take, and it will require some time to set them right. I therefore concluded to address a letter to each assessor in the State and give instructions how to proceed in cases where farmers persist in withholding the information which the assessor is required to take. There is no law to compel the farmer to give this information; but it is made the duty, under the law, for the assessor to get it in some way. If all other means in securing the information fail, then he should, by careful estimate, fill out the blanks in the statistical roll as required by law. We must in some way get these statistics, and as the law provides a way for assessors to get them, even though farmers withhold them, we trust every assessor will avail himself of the means afforded."

DAIRY GROWTH.

The Hon. W. H. Morrison, Superintendent of Farmer's Institutes in Wisconsin, in an address delivered at the recent meeting of the Wisconsin Dairymen's Association, said that when the Association was formed, eighteen years ago, the annual Wisconsin dairy product was about \$1,000,000; now it has increased to \$28,000,000. The value of the dairy products of the United States reaches into the hundreds of millions annually, distributed among the farmers. No monopoly controls it, no syndicate or trust threatens its success, and every farmer who owns a cow is entitled to a portion of its dividends according to the amount of intelligent care he bestows upon her. The dairy business is a renovator, a restorer of wasted soil fertility, as well as an educator of the man. To be a good dairyman, means to broaden and become a better man and citizen. Wherever you find in the State a section mainly devoted to dairying, there you find prosperity.

KINDRED INSTITUTIONS.

The Thirty-seventh Annual Report of the State Board of Agriculture of Massachusetts contains 383 pages, and is bound together with the Seventh Annual Report of the State Experiment Station, comprising 333 pages, and illustrated by cuts showing the various Station buildings.

The Annual Report for 1890 of the California State Board of Horticulture is made up of 536 pages of reports of officers, proceedings of the Board, and practical papers upon fruits, insects, and insecticides.

Massachusetts State Experiment Station Bulletin No. 39 shows the meteorological report for four months, and a discussion of how to improve productivity in farm lands.

The Second Annual Report of the Tennessee Station contains, besides a financial statement, the general outline of the work for the year past.

Report No. 1, Miscellaneous Series, Department of Agriculture, is devoted to flax, hemp, ramie, and jute.

Experiments with onions, cabbage, potatoes, plums, and grapes are reported upon in Bulletin No. 19, Minnesota Experiment Station.

Part 2, Annual Report of the Maine Station, contains results with experiments in "Cattle Foods, Miscellaneous Feeding Experiments, and Tests of several Breeds of Dairy Cows."

Transactions of the Massachusetts Horticultural Society for 1888, Part 2, contains 380 pages of interesting horticultural matter, minutes of various meetings, etc., and is accompanied by a "Schedule of Prizes offered by the Massachusetts Horticultural Society for 1890."

"Fungicides" is the title of Bulletin No. 102, of the Connecticut Experiment Station.

"The Sugar Beet" is the title of Bulletin No. 16, issued by the Departments of Agriculture and Chemistry of the South Dakota Station, Bulletin No. 19, by the same Station, is devoted to "Small Grain."

Special Bulletin K of the New Jersey Station is devoted to "Insects Injurious to Cranberries."

The Annual Report of the Michigan Experiment Station is a bulky report of 298 pages, giving full details of the work of the year ending June 30th, 1889.

"Microscopic Study of Certain Varieties of Cotton" is the subject reported up in Bulletin No. 13, of Alabama Station.

KANSAS THRIFT.

It may not be generally known that Frontenac coal is being shipped in large quantities to Great Britain, where it has been found to be the best in the world for certain manufacturing purposes.

The corn still remaining in farmers' hands in Kansas is at present prices worth about as much as the entire crop was worth when it was gathered. And yet, it is estimated nearly 100,000,000 bushels have been sold. Who says Kansas is not in good shape?—*Winfield Courier*.

Dewey Bros., of Chicago, have an immense cattle ranch a few miles from Manhattan. They have established a large feeding and shipping establishment on the edge of the city. Since January 1st this firm has sold cattle to the amount of \$55,000. They have also bought over 150,000 bushels of corn for feeding purposes, and paid from two to three cents more a bushel than the average price.

The egg industry of Kansas is one that is worth more to the State than the iron industry is to many of the mineral-producing States. The value of the eggs shipped from Kansas reaches far into the millions. Many small towns in the State last month payed out from \$1,000 to \$10,000 a week for eggs. A single merchant at Marion last year paid out \$27,000 to the farmers in the surrounding country.—*State Journal*.

There are some lines of extensive business carried on in Manhattan which have not been widely advertised. The hills that surround Manhattan are full of the fine building stone which much impresses visitors as they find it in many public buildings and residences. The leading firm in the business, Ulrich Bros., during the month of April shipped 160 cars of stone. They have forty men employed in their quarries and works, and pay \$550 a week wages.

Sheep are on the up grade. The price has more than doubled within the past year. The mutton breeds have opened up a new departure of profitable sheep-breeding for mutton first, for spring lambs in the second place, and for wool in the third place. With these three strings to our bow, sheep-breeding, with the improved breeds, will add a new feature to our agricultural prosperity, of which improved stock is the basis.—*Western Agriculturist*.

Commissioner of Forestry Allan was in town on Wednesday. He says the forestry stations at Ogallala and Dodge City are in a flourishing condition. He has supplied over 4,000 people with an average of 500 trees each, which would make a magnificent total of 2,000,000 trees. It is also interesting to note that the stations produce nearly three times as many trees as last year, and for the same amount of land and labor the Ogallala station produced nearly twice as much as that at Dodge City. The forestry stations are grand things for Western Kansas.—*Ellis Review*.

There never was a better crop prospect in Harper County at this season of the year than there is at the present time. The *Republican* failed to make a note of the splendid rains of three weeks ago, but they came and thoroughly replenished the earth with moisture, nevertheless. Then we have had fine rains this week. Wheat is growing at a rapid rate, and its condition is all that the most exacting farmer could ask. Preparations are going forward for an immense crop of corn, and it will all be in within the next two weeks. A large acreage of oats is also being put in the ground, and altogether the outlook is all that heart could desire.—*Anthony Republican*.

Among the many noticeable improvements in this county within the past five or six years, none are more worthy of mention than the wonderful difference which appears every day in the quality, style, and breed of horses. A few years ago you could scarcely see any other kind except Texas ponies, or the stunted common stock of the country. Now, almost every farmer in the country not only owns large, comely draft horses, but many of them have been breeding the finest blooded animals that can be obtained in the United States. We doubt if any other county in the State of Kansas can produce a larger number of good horses than Clay. There is no better evidence of that fact than the increased number of horse buyers who have visited our county within the past few years. They know where to find good stock.—*Clay Center Dispatch*.

CALENDAR.

1889-90.

Fall Term—September 12th to December 20th.
 Winter Term—January 7th to March 28th.
 Spring Term—March 31st to June 11th.
 June 11th, Commencement.

1890-91.

Fall Term—September 11th to December 19th.

TO SCHOOL OFFICERS.

The College Loan Commissioner has funds to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioners and the State Agricultural College. Address Jno. E. Hessian, Loan Commissioner, Manhattan, Kan.

LOCAL MATTERS.

Mr. Baxter filled the last of the flower beds on Thursday.

Mrs. L. R. Elliot, with her sister, Mrs. Bowen, of New York, visited the College Monday morning.

The Hamiltons defeated the College Club in a game of ball yesterday afternoon, by a score of 17 to 10.

Mrs. Kellerman and Mrs. Popenoe attended the meeting of the Social Science Club at Lawrence, last week.

Mrs. Kedzie and Mrs. Winchip are in Topeka today, both interested in matters pertaining to Commencement.

A large procession of young botanists started for File Creek this morning, under leadership of Prof. Kellerman.

College exercises will be dispensed with on Decoration Day, and the College Cadets will share in the procession.

Monday dinners and Friday lunches have been discontinued, to the regret of everybody except, perhaps, the Cooking Class.

The order for class-day programmes for the Seniors has been placed with the engraver, and the programme itself is almost ready for the printer.

W. H. Sanders, Fourth-year student, visited Salina Saturday, as a delegate from the College Association to the District Convention, Y. M. C. A.

Mr. Lamm, of Lansing, Kansas, visited his son at the College on Tuesday, spending most of the day here. He expressed satisfaction with the work of the College.

Prof. Brown's name appears on one of the committees appointed by the Commander of Lew Gove Post, G. A. R., to make ready for Decoration Day exercises.

Prof. Lantz occupied the public hour yesterday with a clear and concise account of the story of Ulysses as told by Homer, with remarks upon the grand place in literature of all lands held by the two great Epics, the Iliad and the Odyssey.

The following officers were elected in the Y. M. C. A. for the ensuing year: President, H. B. Gilstrap; Vice-President, F. W. Ayres; Recording Secretary, B. H. Pugh; Corresponding Secretary, G. L. Melton; Treasurer, J. A. Davis.

Ushers for the exercises of Commencement Week will be chosen as follows: For the Baccalaureate Sermon, from the First-year Class; for the Third-year Exhibition and the Annual Address, from the Second-year Class; for Commencement Day, from the Third-year Class.

The annual Fourth-year party at the President's house took place on Wednesday evening, and gave its share of the sad pleasures grouped about the close of a four-years' course. The party was jocund with games and good cheer, but sad as a foreboding of parting ways.

Prof. E. O. Wooton, formerly of the Friends' Academy at Tonganoxie, Kan., but recently appointed Professor of Natural Sciences in the newly organized Agricultural College of New Mexico, spent three days at the College this week, interested in study of methods.

Monday morning College people climbed the hill under the grateful shade of umbrellas, in a temperature of 80 degrees, and in passing to and fro from classes shortly after ten o'clock found wraps comfortable, the temperature having fallen twenty-five degrees in less than half an hour.

The failure of the boiler in Mechanics Hall, on Saturday, has been the cause of much delay and annoyance, with not a little discomfort on the cold days. The leak is such that it becomes necessary

to uncover the boiler, thoroughly inspect and repair and reset it, all of which will take several weeks. In the meantime, the machinery in the Carpenter Shop lies idle when there is much for it to do, while in the Printing Office, three strong-limbed, strong-lunged young men turn the press, and that at the proverbial snail's pace despite their best efforts. As a lung-tester, a heavy cylinder press is without an equal.

Dr. E. E. White, of Cincinnati, will give the Annual Address of Commencement Week, with the subject, "Character." Dr. White has a national répute as a public lecturer upon educational matters, and is a most graceful and entertaining speaker. Those who have heard him once will not miss this opportunity to listen again, and others surely cannot fail to seek their first opportunity to see and hear one of the leaders of educational interests in this country.

GRADUATES AND FORMER STUDENTS.

B. H. Pound, Second-year, has dropped out of College to work.

Rev. A. J. White, '74, reports a new boy at his home in Atchison.

E. M. Blachly, Second-year, has dropped out for the year on account of failing health.

H. W. Jones, '87, Principal of the Americus schools for the year just closed, is at home again.

R. U. Waldraven, '89, is appointed organizer for the Alliance in Washington County, address Parallel.

Mr. and Mrs. E. B. Coffman, of Jewell, both well known here [and both students in 1881-2], have been entertaining a new daughter since the 1st.—*Manhattan Nationalist*.

J. B. Anderson and wife [both former students], are receiving the congratulations of friends since May 3rd. Cause, the birth of a son in their household.—*Manhattan Nationalist*.

C. A. Murphy, '87, will complete the course of the State Normal School next month, and hopes to take up at once study for the Master's Degree in Physics and Engineering at this College.

Miss Mary Kokanour, Fourth-year in 1886-7, who has for four years past been a compositor in the office of the *Manhattan Nationalist*, has gone to her home near Clay Center to attend her sick mother, and will probably remain there.

COMMENCEMENT EXERCISES.

The general invitations to Commencement Exercises will be issued next week. These exercises include the following:

Address before the Societies, Saturday evening, June 7th, by Rev. B. J. Radford, of Cincinnati, Ohio.

Baccalaureate Sermon, Sunday, June 8th, at 4 P. M.

Class Day Exercises for invited guests, Monday, June 9th, at 4 P. M.

Third-Year Exhibition, Monday, June 9th, at 8 P. M.

Annual Address, Tuesday, June 10th, at 8 P. M., by Dr. E. E. White, of Cincinnati, Ohio.

Commencement, Wednesday, June 11th.—Graduating Exercises at 10 A. M.; Military Parade at 2:45 P. M.; Alumni Address at 4 P. M., by M. F. Leasure, Esq., Class of '77; Alumni Reception for invited guests at 8 P. M.

Dinner will be served on Commencement Day by the ladies of the Episcopal Church.

LABOR AND EARNINGS.

Every encouragement is given to habits of daily manual labor during the College course. Only one hour of daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their abilities and means.

All labor at the College is under the direction of the Superintendents of the departments, and offers opportunity for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed.

The shops and offices are opened afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed—outside of required hours of labor—upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates varying with services rendered, from eight to ten cents an hour. The Superintendents strive to adjust their work to the necessities of students, and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay-roll for the past year ranges from \$250 to \$400.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term time, or from other sources, for the larger part of their expenses. The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

COLLEGE LIVE-STOCK FOR SALE.

We call the attention of our readers to the fact that the Board of Regents of the College have authorized the sale of a number of Shorthorns and Jerseys from the College herd, which is deemed too large for the means of maintenance and the needs of the institution, numbering as it does upwards of 50 head. Among the Shorthorns offered for sale are thirteen cows and heifers and several very promising young bulls, all fine specimens of the breed that will prove valuable acquisitions to any herd. Here is a chance of getting some good foundation stock which breeders and admirers of good Shorthorns should not fail to improve. They will be sold at reasonable prices considering their breeding and individual merit. The cows have all been bred to Scottish Chief 89317, one of the finest Cruickshank bulls in the State, and the heifers offered are of his get. Several of the young cows are by the fine imported Cruickshank bull Thistle-top, 83876, now in Colonel Harris's herd, Linwood, Kansas.

Among the Jerseys are several young cows, now getting into the prime of life, all of Herd-Book stock, which will be sold for \$75.00 each.

Persons who contemplate buying are cordially invited to visit the College and inspect the herd, and correspondence on the subject is solicited by the Professor of Agriculture, who will furnish all desired information in regard to prices and pedigrees.

COLLEGE SOCIETIES.

SOCIETY HALL, May 9th. The Alpha Beta Society, upon being called to order by President Smith, listened to a duet by Misses Jennie and Julia Greene; Maud Parker, organist. Devotion, led by Miss Parker. The Society then heard the discussion of the question, "Resolved, That engineers as a class should receive better wages than ministers," Messrs. Zimmerman, Harmon, and Orr acted as judges. W. W. Hutto, who was chosen to fill the place left vacant by B. H. Pound, argued the affirmative, assisted by Ella Barnes. The negative was argued by J. N. Harner and Jessie Stearns. The Judges decided unanimously in favor of the negative. The next in order was the Gleaner, read by E. C. Thayer. Recess. Music, a solo, by Miss Parker. Mr. Thayer, as Newsman, gave the most important happenings of the week. Informal speeches were the next on the programme. Miss Cottrell gave the Society her views on the practice of novel-reading. She thought the reading of some of the novels like "Ben Hur" or "Uncle Tom's Cabin" was beneficial, but that little good could be derived from such books as written by Rider Haggard and others of like character. Her speech caused an interesting discussion by other members, many of whom thought there was much to be learned from even such books as she would not have them read. At the close of the discussion, the Society heard the report of Committees, and then took up unfinished business. Under the head of new business, a motion was made to have a committee appointed to see the President about having the windows fixed on account of the noise on windy days. Mr. Thayer was assigned as Newsman, and Miss Secret to take the place of B. H. Pound as member of the committee on questions for debate. Report of Critic. Adjournment. COR. SECY.

EXPENSES.

Tuition is free, and no general fee for incidental or contingent expenses is charged. In a few special departments of instruction, the following payments are made in advance to the Secretary:

In the term of Analytical Chemistry, students pay \$3 for the chemicals and apparatus used in their laboratory practice and analysis.

In the Printing Office, young men, in their first year, pay \$3 a term for office expenses. Advanced students have the use of the office for the work performed during the industrial hours.

In Telegraphy, young men pay \$3 a term for office expenses.

Young women are furnished both Printing and Telegraphy free of expense, these two offices, with the Sewing and Cooking Departments, being provided especially for their industrial training.

Lessons in instrumental music—two a week—are from \$10 to \$20 a term, according to its length; one a week, \$6 to \$8.40. One-half is to be paid to the instructor in charge with the first lesson, the other half at the middle of the term.

The cost of text-books at the book stores is, for the first year, about \$4 a term; for the second year, \$2.75 a term; for the third year, \$7 a term; and for the fourth year, \$5.50 a term.

The expenses for apparatus and tools to each student during the course are as follows: Drawing, \$3.50; microscope for Botany and Entomology, \$1.50; case, pins, etc., for Entomology, \$2.25; rules, in carpentry 25 cents, printing 25 cents. The total expense for these articles during the four years is less than ten dollars.

Board and washing are not furnished by the College. Board, with furnished rooms, can be procured in private families at from \$2.75 to \$4 per week. Some students board themselves at even less cost; and rooms for the purpose can be obtained at a rent of from \$1 to \$3.50 a month. Washing costs from 50c to \$1 a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$100 to \$200 a year.

COLLEGE BUSINESS.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. Applications for extension of time on land contracts should be sent to the Secretary of the Board of Regents, at Manhattan.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Kellerman, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study or work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

Applications for Farmers' Institutes should be addressed, as early in the season as possible, to the President.

The Experiment Station should be addressed through the Director.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

EDUCATIONAL MEETINGS.

Ellis and Russell County Teachers, Russell, May 10th.
 Washburn College Commencement, June 6th to 18th.
 Kansas Chautauqua Assembly, Topeka, June 24th to July 4th.
 Deaf and Dumb Institute Commencement, Olathe, May 31st to June 9th.
 Agricultural College Commencement, June 7th to 11th.
 Ottawa Chautauqua Assembly, June 17th to 27th.
 State Normal School Commencement, June 9th to 12th.

Hutchinson had a home talent oratorical contest at the High School Hall on May 16th.

Washburn College recently received a box of five sea shells from the South Sea Islands, presented by Rev. A. C. Walkup.

The Speers-Winans Association, at Junction City last Friday and Saturday, was a grand success. About one hundred teachers from Geary, Riley, Clay, Morris, and Dickinson Counties were present.

Olathe High School has inaugurated a reform that deserves to be imitated. By order of the School Board neither flowers nor presents of any kind will be received on the platform during the exercises.

The Wesleyan University at Salina has elected Prof. Dome Geza Assistant Teacher of Music. Prof. Geza is a Prussian, was educated in Germany, and is said to be a master of the violin. Prof. Guile is the Dean of the department.

The Riley County Teachers' Institute begins this year June 9th, and closes July 4th. The board of instructors will be: Miss Ida Ahlbom of Baker University, Conductor, assisted by Messrs. E. A. Allen, of Blue Mound, and C. G. Swingle, of Riley.

Meteor hunting as a business might not pay, but "there is a tide in the affairs of men which," etc., "leads on to fortune." The Washburn *Argo* says: "Prof. Cragin has disposed of the greater part of his meteorite, and has had an offer of five hundred dollars for what remains. He will make over \$1500 in the transaction.

The Summer Normal of Lane University at Lecompton will be held in the "Gould College" building at Harlan, Kansas, beginning June 25th, and continuing ten weeks to Sept. 3d. This will be an excellent opportunity for those who are teachers and wish to review or take advanced studies, for those who are preparing to teach, and for those who wish to study a few branches to prepare for college.

The State Normal School of Kansas is a State institution in the fullest sense, and this fact is shown conclusively by the attendance of the year, which has reached at this date, April 11th, a total of 1039. This is principally made up of teachers who are preparing themselves for higher and more efficient work. The young men and women engaged in teaching in Kansas represent the hard-working, progressive, and thoughtful element of our American life. Counties that sent us six students last year are sending delegations of twenty this year.—*Normal Quarterly*.

The celebration of the victory achieved for Kansas by student W. Naylor of Washburn at the Inter-State Oratorical Contest at Lincoln, Neb., recently, was a grand affair. A special train from Lawrence brought Chancellor Snow, a member of the Faculty, and 250 students of the University. They were met at the depot by Marshall's Band and a committee, and escorted to Washburn College. Cannon salutes were fired from the State House grounds. Mr. Naylor was reared on a farm in Shawnee County, and has worked his way to the front through difficulties.

"Wer hat nicht in seinem Leben Verse gemacht!" says the immortal Schiller; but the Lawrence *Journal* looks severe and grave, and pens the following: "Professor Hopkins, of the English Department, an excellent instructor, has required of a class in 'advanced English Composition,' made up chiefly of seniors, that each member thereof hand in an original ten-line poem. The results of this simple requirement are easily to be prognosticated. The University is to be a poet factory. This attempt of the University to convert the steady-going Kansas youth into a long-haired, soiled-collared, suspenderless, generally down-at-the-heel poetaster, whose eyes will suffer from so much rolling in fine frenzy that the toiling farmer parent on the father's side will have to sell seven bushels of corn to buy a dollar pair of genuine pebble glass specs—this determination on the part

of the University to condemn the young men of this State to the inevitable penury of poets, we must deplore."

MEANS OF ILLUSTRATION.

Agriculture.—Two farms of 215 and 100 acres, for the most part surrounded by durable stone walls, subdivided into fields of variable size to suit the system of management.

A large variety of standard grains and forage crops in cultivation in fields and experimental plots.

A barn 50 by 75 feet, expressly arranged for experimental uses; and connected with it a general-purpose barn, 48 by 96 feet, for grain, hay, horses, and cattle. Both buildings are of stone, and are provided with steam power, and equipped with improved machinery for shelling, grinding, threshing, cutting for the silo, and steaming.

Two piggeries, one of ten pens for experimental uses, and one of six pens, with separate yards, for general purposes.

An implement house 22 by 50 feet, of two stories, and corn-cribs. Shorthorn, Aberdeen-Angus, Hereford, and Jersey cattle; Berkshire and Poland-China swine.

Farm implements of improved patterns.

Collections of grains, grasses, and forage plants.

Buildings, stock, and equipments are valued at \$25,000.

Horticulture and Entomology.—Orchards containing 275 varieties of apples, 80 of peaches, 50 of pears, 16 of plums, 20 of cherries, and 10 of apricots.

Small-fruit garden, with 200 varieties of small fruit, including blackberries, raspberries, gooseberries, currants, and strawberries; and vineyard, with 75 varieties of grapes.

Forest plantation of twelve acres, containing twenty varieties of from ten to fifteen years' growth.

Ornamental grounds, set with a variety of evergreens and deciduous trees. Sample rows, containing about 150 varieties of ornamental and useful shrubs and trees, labeled.

Vegetable garden, with hot-beds and cold-frames and experimental beds. Practice rows for students' budding, grafting, cultivating, and pruning.

Two well-planned and furnished greenhouses of three rooms each, stocked with a collection of native and exotic plants.

Museum, containing a collection of woods from American forests, and a large series of specimens in economic and general entomology.

Value of property, exclusive of orchards and grounds, \$11,500.

Chemistry and Mineralogy.—Eight rooms, fitted with tables and apparatus for a class of eighty students in qualitative analysis, sixteen in quantitative analysis, including necessary facilities for assaying, with a mineralogical collection and general illustrative apparatus. Value, exclusive of building, \$7,500.

Botany.—A general herbarium, consisting of a large collection of plants of the United States and other countries; a Kansas herbarium, containing specimens illustrating the distribution and variation of plants throughout the State; also twenty-one compound microscopes, three dissecting microscopes, tools, reagents, wall-charts, etc. Value at \$2,500.

Geology, Zoology, and Veterinary Science.—A general museum well fitted with cases containing valuable collections of mounted Kansas mammals and birds, with mounted skeletons of wild and domestic animals. The largest collection of Kansas fishes and molluscs in the State. Kansas reptiles and batrachians, salt-water fishes and invertebrates in alcohol. Collections of Mound-builders' and Indian relics, Kansas fossils and rocks, typical of the geological ages found in the State.

In *Veterinary Science*: A laboratory fitted with apparatus and reagents, for the study of disease. A collection of charts, models, and anatomical preparations, illustrating healthy and diseased structure. Value, \$4,500.

Drawing.—Models, plaster-casts, patterns, charts, easels, and implements. Value at \$1,400.

Physics.—Physical apparatus, meteorological instruments, etc. Edelman's dynamo electric machine, with numerous accessories, sling psychrometer, and anemometer. The value of the whole is \$2,500.

Mathematics and Surveying.—Transits, compasses, levels, chains, models, etc. Value at \$1,000.

Mechanics and Engineering.—Carpenter shop, with separate benches and tools for forty-five students in each class, besides lathes, mortising machine, circular saws, band saws, planer, frieze, boring machine, grinder, and general chest of tools for fine work. Power furnished by a ten-horse-power Atlas engine.

Shops for iron work, with forges, vises, drills, etc. Testing machine, charts, and models.

Inventory of material and apparatus in both shops, \$5,800.

Kitchen Laboratory, with ranges, cooking utensils, dining-room furnishings, dairy furniture; valued at \$2,00.

Printing.—Office, with thirty pairs of cases, large fonts of six point, eight-point, ten-point, and eleven-point Roman type; a good assortment of job type and brass rule; a Babcock cylinder press with steam power, a Gordon job press; a mitering machine, a rule curving machine, and a paper cutter. Value of equipment, \$3,500.

Telegraphy.—Office, with five miles of line, connecting twenty branch offices, and as many instruments. Inventory, \$1,000.

Sewing Rooms, with six machines, models, patterns, and cases, worth \$550.

Music Rooms, with four pianos, four organs, and other instruments; valued at \$1,500.

A Library, carefully selected and catalogued, containing over 9,000 bound volumes, and 2,500 pamphlets. A reading-room is maintained in connection with the library, where may be found on file forty-five of the leading literary, scientific, technical, and agricultural periodicals, and several hundred newspapers, including the *Princpal* daily and county papers from all parts of the State. Value of library, \$1,000.

Armory, containing one hundred and fifty stands of arms (breech-loading cadet rifles, calibre .45), with accoutrements; two three-inch rifled guns; also swords, uniforms, etc. Value, exclusive of arms, \$500.

INDUSTRIAL TRAINING.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have Farming, Gardening and Fruit-growing, Carpentry, Cabinet-making, Iron-work, Printing, Telegraphy. Young women may take Sewing, Printing, Telegraphy, Floriculture, or Music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second year and the fall term of the third year, upon the farm, gardens, and orchards. Young women take their industrials for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen, laundry, and dairy.

INDIAN SCHOOLS.

While generous appropriations are being made by the National Legislature for pensions, and for building war vessels, it will be poor economy to so reduce the appropriations for Indian schools as to make impossible the advance for which Commissioner Morgan has so ably planned. He asked for \$2,845,610, but he has been obliged to revise his estimates, and deduct from this sum \$801,000. With this sum it is proposed to enlarge seven industrial training schools, to equip three new schools, and to repair a number of buildings. Of this amount, \$255,000 should go to meet obligations assumed by the Government to furnish schools for the Sioux, from whom it recently purchased a large tract of land. Of the 36,000 Indians of school age, there are school accommodations for only 10,671. These 25,327 children must be educated, or there is little prospect that they will cease to be dependent pauper wards of the Government. It is wise to pension veterans disabled by sickness and age. But it is folly not to help children supported by the Government to take care of themselves, when opportunity is offered, and feasible plans for doing it are ready.—*The Congregationalist*.

ADULTERATION LAWS.

Respecting which we have to say, that if all goods made could be sold on their merits, sold for just what they are, there would be less opportunities for stealing and fraud than now exist. Sell cotton-seed oil for what it is, sell beef fat for what it is, and hogs' lard on the same honest business principles; teach, so far as the laws are concerned, that honesty is the only policy to be practiced, and we will have much less dishonesty practiced by the business men and manufacturers of the American commercial world. It has been told scores of times that cotton-seed oil is vastly better for culinary purposes than hogs' lard, and we see no reason why it should not, therefore, be sold on its merits.—*Colman's Rural World*.

HEAVIER HORSES.

The standard of size in horse-breeding has advanced materially. The city traffic, express, and grocer wagons now buy 1200 to 1300 pound horses, where formerly 1000 to 1100 were used. Formerly 1200 to 1400 pounds was considered a good draft horse. Now our heavy city trucks require them 1700 to 1800, and the heavier the weight the higher the price. Formerly a 1500 pound horse or mare was considered too heavy for the farm; now there are many of our oldest draft-horse breeders that have high-grade draft mares 1600 to 1800 pounds that make grand farm teams, and are like a gold mine on the farm for raising colts. The farm work of England, France, and Scotland is quite generally done with the full-blood draft horses, and America is fast being educated up to the same standard.—*Western Agriculturist*.

MANHATTAN ADVERTISEMENTS.

R. ALLINGHAM, dealer in Fresh and Salt Meats. Special attention to student trade. Goods delivered free.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

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THE INDUSTRIALIST.

VOLUME IV.

MANHATTAN, KANSAS, SATURDAY, MAY 24, 1890.

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GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 p. m., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

THE CARP AS A FOOD FISH.

BY SUPT. J. S. C. THOMPSON.

THE fact that the carp is a much-abused fish probably had its origin in the experience of growers who attempted to cultivate it under unfavorable conditions, and with little or no knowledge of its habits and requirements. As a result of this opinion, which is held by many who would otherwise give the fish a trial, comparatively little is done to encourage and develop the industry—for as such carp culture has long been recognized in Europe, particularly in Germany and Austria, where the business is systematized and carried on on a large scale, the ponds of an Austrian prince alone covering fully 20,000 acres of ground.

An article dealing with the carp, published in the *American Angler* from the pen of Mr. W. S. Ritchie, contains so many points of interest to carp-raisers, with so much valuable information for those who think of engaging in the business, that our State Fish Commissioner, Hon. John Brumbaugh, of Concordia, had it printed in circular form, with his endorsement; and it is sent on request to all who are interested. It makes a circular of four letter pages, and seems to cover the ground thoroughly. For the purpose of showing something of its contents, and at the same time to correct a number of popular errors by quoting the opinion, based upon actual experience, of one who has made the fish a study for several years, excerpts from Mr. Ritchie's letter are here given; but those who would learn more of the "new agriculture" should send to Commissioner Brumbaugh for the circular:—

"Rapidity of growth is perhaps the distinguishing factor in the development of our carp interests, though it may be the same place should be accorded to the wonderful adaptability of this fish to changeable or adverse circumstances. No fish of which we have any knowledge makes such surprising and gratifying progress in growth, and at the same time bears so well the trammelled condition of small bodies of water, or subsists on such various foods. The fact that the carp can subsist in close or impure waters has damaged its reputation. The fish from such a habitat have been found tainted with a bad flavor, and have in instances been condemned wholesale. A fact of value in this connection is, that small bodies of dead or impure water may be purified by introducing plants which take up these impurities into their own organisms. A complete illustration of this is in the fact of a small aquatic plant growing under water in a globe containing a fish—that it will keep the water pure for an indefinite time."

After reciting at length the conditions of growth,—which, briefly told, are food and warmth,—and giving definite directions for the construction of ponds, the management of overflows, drains, and dams, with paragraphs devoted to the enemies of the fish, spawning, etc., the writer concludes:—

"The quality of carp as a food fish has been the text of a number of wordy battles, with a range of opinion at times almost irreconcilable. The *New York Herald*, sometime last August, contained an article stating very emphatically that carp were unfit for food. This opinion seems to have been based on the qualities of certain carp taken from the river near one of the large cities. This attack was indignantly refuted in the agricultural papers by scores of culturists over the United States. When we remember that the carp is a very gross feeder, and its wonderfully rapid growth, we can understand that the fish would be more apt to partake of impurities in food or water, should such be present, than a more slow-growing fish. This, I believe, will account for the sometimes contradic-

tory testimony received. Neither is it necessary that a fish with the habits of a carp should be coarse or unpalatable. The gourami, a fish native to warm waters in Ceylon, has commanded the extreme of high praise; yet its habits of food and water are exactly represented to be those of the carp. Emerson, the traveler, said of this fish: 'I never tasted fish or flesh of such exquisite flavor.' It has been the subject of more attempts to acclimatize than all other fish combined, almost, but, unlike the carp, it has never been successfully transplanted to a new home. The Bulletin of the United States Fish Commission of 1883 contained 242 opinions respecting the edible qualities of carp, which were obtained in answer to a circular sent out by the Commission to persons who had received fry. The object was to ascertain definitely how carp were liked. The following language by Mr. Chas. W. Smith, editor of the Bulletin, gives somewhat of a summary of the replies received: 'Of these 242 reports, 38 only contain the slightest reflection upon carp. Many of these objections are decidedly slight. All but one of the criticisms have been explained away, and I believe we possess the clue to that.'

A SPINNING MITE ON THE RED CEDAR.

BY PROF. E. A. POPENOE.

A CORRESPONDENT in Belle Plaine sends a branch of red cedar infested by an insect that he fears is likely to destroy his trees. The specimen submitted shows the cedar twigs covered with a very delicate web, which catches the flying dust and thus renders the branch dirty and dark in appearance. The insects were still alive on receipt, and are determined to belong to the group of spinning mites, *Tetranychidae*, and to a species closely allied to, if not identical with, the red spider so common in green-houses, and in dwelling houses upon house-plants. Upon the broad-leaved plants of the green-house, the red spider commonly operates on the under side of the leaf, and in dry rooms or among plants not regularly and plentifully sprayed with water, the effect of its presence soon becomes noticeable in the discoloration of the leaves attacked, with the accompanying effect of the evident weaker growth of the plant.

Red spiders are entirely vegetarian in their food habits. The mouth has a barbed sucking apparatus by means of which the juices of the leaves infested are soon exhausted. The insects breed rapidly, and the common web which they spin serves further to place the plant at a disadvantage by collecting the dirt and choking up the plant-pores, and so interfering with the functions and health of the leaves.

The species under consideration is so small as to be seen with difficulty without the aid of a good lens, but its presence may be suspected, either indoors or out, wherever the under sides of the leaves, or, in the cedar, the smaller twigs, are seen covered by the fine web.

In the green-house treatment of this pest, we have always relied upon the abundant use of water applied in spray, or at least in fine jets, to the underside of the leaves directly. In aggravated cases, success follows more quickly the use of soap suds for the spray, though pure water will even then suffice, if its use be frequent and thorough. In the case complained of by our correspondent, we can suggest no better remedy than the repeated spraying with strong soap suds of the trees affected. It is not likely that the use of Paris green would have the effect desired, as it is improbable, from the mouth structure of these insects, that they would absorb a solid poison like arsenite.

THE INDUSTRIALIST.

OCCUPATION AS A MORAL FORCE.

Occupation and industry are so often recommended merely for the material gains they bring that their moral force is not always recognized as it should be. Yet occupation that brings no material reward, and is, by comparison with work, the merest trifling, may be, if innocent in itself, a moral force simply because it keeps the individual out of temptations and gives employment to his energies. Idleness is a fruitful breeder of mischief. The mind, if not the body, must be at work during idle hours. It is difficult to conceive of a period of inaction for the brain except during sleep or insensibility.

Thoughts come unbidden; they may be mischievous or merely idle, but occupation supplants them with other thoughts relating to the work or play in which one is engaged, or stirs the mind to speculation or planning. It is not possible, even though it might appear to be desirable, to keep men at work during all their waking hours. They must have rest and recreation, and it is during this period that they need some occupation, harmless in itself, to keep them out of mischief. It is for these otherwise idle hours that good amusements should be provided—books or papers to be read, societies, literary entertainments, concerts, and theatrical performances of an improving kind to be attended.

In a great city many of these needs of humanity are furnished by business men to meet a want as real as that for food and clothing. But there are many who have not the means to avail themselves of such occupation as is thus provided for idle hours, and for such as these charitable people establish free libraries, schools and other places for self-improvement. Some of the workingmen's clubs and similar bodies go further than this and furnish gymnasiums and rooms for various games, recognizing that occupation for idle hours is the main thing, and that it must be of a kind contrasting with the daily labor or in violent exercise; the mechanic, who has enough of both, is better satisfied with a book or with a game that calls only for mental exertion.

All these different tastes and needs for an occupation that may fill in idle hours are fairly well met in a large city by the variety of entertainments provided by business men and philanthropists—the one for gain, the other for the good he may do humanity. But it is far different in the smaller towns and villages, where it does not pay to cater to such needs and where there is seldom wealth enough to furnish from its abundance free entertainment or educational advantages. For all such places, however, there is opportunity to do good work by co-operative enterprise at very little cost. A literary society meeting in the school-house or church furnishes occupation for the thoughts of members, not merely during the few hours devoted to the meetings, but for many hours in preparation therefor. It may also furnish the foundation for a small circulating library of books or papers that will provide reading matter, giving useful occupation for other spare hours. From such beginnings in the course of time may be developed a lecture bureau bringing to town or village occasional speakers from abroad.

All such enterprises, undertaken in the right spirit, have undoubtedly educational and moral value. In the smaller corporative bodies work on the part of the members takes the place of money capital. A lazy village may be transformed by such an institution; the young men, instead of idling away their hours of rest in useless or mischievous gossip at the country store or the wheel-wright's, may have their ambitions aroused, be encouraged to read and study, and thus be given occupation that will keep them out of mischief and promote their moral and mental welfare. Many of the great men of the country received their earliest impulses to study in societies of this kind. The educational value of the exercises may have been limited, but the readings, the debates, and other literary endeavors stimulated a desire to learn and established habits of an industry bearing good fruit in later years.

What form the effects to provide occupation for idle hours should take, depends very much upon the community to be reached. It should be adapted to their wants, as well as to their needs. Aiming at too much good may defeat the purpose of the occupation, provided it should be in the nature of drudgery. For men who work hard during the day, relaxation and amusement are needed. These may be found in reading, in literary exercises adapted to their understanding, and games of various kinds. But as their main purpose is to occupy their idle hours with exercises not injurious, efforts

toward their improvement should be limited to such things as will surely enlist their interest and engage their attention, trusting to time and the influence of good habits for the future development of higher tastes and demands.—*Baltimore Sun.*

THE VALUE OF APPEARANCES.

The improvements thus far spoken of have been those which help to mitigate the hardships of farm life and make its labors lighter. But it pays in every way to improve the appearance of the homestead. The consciousness of presenting to the eye of the passer-by a picture of order and tidiness will pay. The educating influence of a neatly ornamented yard upon the tastes and habits will pay. The delight which the farmer himself will take in an attractive home will more than pay him. The increased money value of his farm will pay in hard dollars. It would pay if he were driven to sell his homestead and it will pay if he holds it in giving him a reputation for thrift, which helps his credit, and for thoroughness and cleanliness which gives an added value to what he sends to market wherever he is known.

It may pay better indirectly still, for the example of a tidy farmhouse is contagious. The front-yard of its neighbor will soon cease to be a hospital for ruptured and crippled machinery. The lawn-mower will soon be heard rattling in all surrounding homes. Street trees, neatly kept roadsides, shrub-bordered lawns, and flower-beds will follow, and the entire appearance of the neighborhood will be revolutionized. All this has happened. Such cases have been put on record in the reports of the Pennsylvania State Board of Agriculture and elsewhere, and this result would be its own sufficient reward. But it attracts visitors from distant cities. They enjoy their summer leisure amid such surroundings. Some of them begin to buy lots for permanent homes. The place becomes the chosen residence of many retired men of means, and all this makes a home market and brings in money. Nor is this a fiction. It has been actual history in more than one New England town.—*Philadelphia Press.*

CANNED BEEF.

According to the monthly statement of the Bureau of Statistics, nearly 60,000,000 pounds of canned beef were exported from the United States during the eight months ending Feb. 28, 1890, or 20,000,000 pounds more than in the corresponding period last year. The increase was chiefly in the shipments to England, to which country no less than 45,000,000 pounds were sent, against 27,000,000 pounds the previous year. Germany took 1,300,000 pounds more, and other European countries 3,750,000 pounds more. The shipments to all European countries amount to 55,503,549 pounds for the eight months, against 32,438,897 pounds during the corresponding period last year. The value of the exports to all points is \$4,729,656 for 1889-90 and \$3,243,132 for 1888-89. With an increase also of nearly 27,000,000 pounds in the shipments of salted and pickled beef, and 37,500,000 pounds in the movement of fresh beef, it is obvious that packers have good cause to be satisfied. According to the Government returns, their eight months' export business in cured and fresh beef amounted to \$16,370,000, or \$4,400,000 more than during the corresponding period last year.—*Colman's Rural World.*

WOMEN IN FAIR MANAGEMENT.

No better element could be introduced into the management of local fairs than a few of the best women of the community. Where women are there is purity, refinement, order, elegance of arrangement and good taste generally. Their influence is elevating and their intelligence and judgment of great value. They are clear headed, level headed and enterprising; and would lend considerable enthusiasm to any department if committed to their charge. They would want all buildings thoroughly cleaned, white-washed, and put in order; then they would want decoration, ornamentation, an air of refinement. This, with help to do it, accorded them, they would bring to their assistance others, and very soon spread the news with enthusiasm there was to be a ladies' department for all kinds of needle-work, baking, cooking, preserve and jelly-making, the exhibition of flowers, pictures, poultry, dairy products, and the good things of life generally. Where the good women are (the old and the young) there is pretty apt to be enthusiasm and success. Call out the women, then, and the young men.—*Colman's Rural World.*

KANSAS THRIFT.

Seven car-loads of eggs were shipped from Manhattan during the month of April; also 122 car-loads of stone.

Talking with a Neosho County farmer the other day, he said that one of his neighbors made thirty dollars an acre off part of his farm last year. He did it with a crop of castor beans, raising fifteen bushels to the acre and selling them for two dollars a bushel. The same gentleman told us that the dealers were contracting this year's crop at \$1.60 a bushel.—*Iola Register.*

In all the resources and acquirements that go to make a people rich, wise, and great, Kansas has no equal in the history of people in ancient or modern times. You cannot run an imaginary line around one territory upon this earth that contains just one million people thereon that possess horses, cattle, and hogs, as much wheat and corn, as many newspapers, and as many miles of railroad as there are upon these beautiful prairies, over half of which, fifteen years ago, and all of it thirty years ago, was in possession of the Indian and the buffalo. There never has been a time in the history of this State when more attention was attracted toward it as a good place to come to. Agriculturists from the north, south, east, and west are looking Kansas all over with a view to bringing their capital and families here. Capitalists are each year gaining more and more confidence in her stability. Manufacturers are recognizing the demands of her rapidly increasing population, and the accessibility to both eastern, western, and southern markets. Kansas has nothing to discourage, but every thing to encourage her. The great unfenced and untamed crop, the one that is coinciding wealth for the State every day, but which many fail to account among her richest resources, prairie grass, is luxuriant this year, and Kansas cattle are in prime condition; all she needs is more of them. A well-stocked cattle ranch is a deal surer than a Colorado mine.—*Wichita Eagle.*

KINDRED INSTITUTIONS.

Bulletin No. 14 of the Alabama Station reports upon "Peavines as a Fertilizer."

Bulletin No. 15 of the same station is entitled "Insecticides," and Bulletin No. 11 bears the name "Peaches and Plums."

Bulletin No. 1, Vol. 3, of the Agricultural College of Tennessee contains reports of experiments in growing potatoes.

Cornell University Experiment Station Bulletin No. 14 contains a full report upon "Growing Corn for Fodder and Ensilage," and illustrates by colored diagrams.

The Michigan Station reports, in Bulletin No. 61, upon "Foul Brood," and Bulletin No. 62 upon "The English Sparrow."

New Jersey Station Bulletin No. 67 contains a "Note on the Wheat Louse."

The Biennial Report of the Commissioner of Agriculture of Louisiana touches upon "The Fertilizing Law," "Experiment Stations," "Entomology and Horticulture," "Organization of Farmers," "Agricultural and Mechanical College," and "Agricultural Fairs." Circular No. 1 of this department shows the average condition of crops for January, February, March, and April, 1890.

The Second Annual Report of the Board of Managers of the State Agricultural School and Experiment Station of the State of Rhode Island and Providence Plantations is divided into two separate pamphlets, part 1 being the report of the school and part 2 of the Experiment Station. The latter shows the organization of the Station, and experiments in stock-feeding, bee-keeping with potatoes, and the meteorological summary from April 1st to Dec. 1st, 1890.

Bulletin No. 8 of the Iowa Station contains the Annual Reports and reports upon "Iowa Station Milk Test," "Sweet-cream Butter," "Sugar Beets," and "Sorghum."

The Second Annual Report of the Texas Station comes bound in cloth, and contains a report of each officer upon the experiments undertaken in his department.

Journal of the Elisha Mitchell Scientific Society, of Chapel Hill, N.C., for 1886, part second, contains, besides reports, the following papers: "Addendum to Minerals and Mineral Localities of North Carolina," "Nemotode Root-galls," "A Tube-building Spider."

The Experiment Station Record, Vol. 1, No. 2, issued by the Department of Agriculture, contains a resume of experiments in all the Stations reporting and a brief note upon the Third Annual Convention of the Association of American Agricultural Colleges held in Washington in November last.

Delaware Experiment Station Bulletin No. 7 is devoted to stock-feeding, and Bulletin No. 8 to "The Possibilities of Developing a Domestic Sugar Industry," "The Value of Sulphide of Potassium as a remedy against Pear Scab," and "London Purple as a remedy against the Codling Moth."

The Second Annual Report of the Texas Station contains the reports of the various officers in its 115 pages, including several cuts illustrative of the "Cotton Root Rot."

The Hatch Experiment Station, of Massachusetts, issues Bulletin No. 6, for May, 1890, containing "Soil Tests with Fertilizers," and a special bulletin for the same month, "On the most profitable use of Commercial Fertilizers," by Prof. Paul Wagner, Director of the Experiment Station at Darmstadt, Germany.

INDUSTRIAL TRAINING.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have Farming, Gardening and Fruit-growing, Carpentry, Cabinet-making, Iron-work, Finting, or Telegraphy. Young women may take Sewing, Printing, Telegraphy, Floriculture, or Music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second year and the fall term of the third year, upon the farm, gardens, and orchards. Young women take their industrials for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

CALENDAR.

1889-90.

Fall Term—September 12th to December 20th.
 Winter Term—January 7th to March 28th.
 Spring Term—March 31st to June 11th.
 June 11th, Commencement.

1890-91.

Fall Term—September 11th to December 19th.

TO SCHOOL OFFICERS.

The College Loan Commissioner has funds to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioners and the State Agricultural College. Address Jno. E. Hessian, Loan Commissioner, Manhattan, Kan.

LOCAL MATTERS.

Abundant rainfall this week helps fields and lawns.

Mrs. Winchip entertained the Faculty with their wives on Wednesday evening in a most enjoyable party.

Prof. Georgeson is visiting several noted herds of cattle in Eastern Kansas and Western Missouri this week.

The Fourth-year Class enjoyed the hospitality of Mrs. Winchip and Mrs. Kedzie at Mrs. Winchip's home last evening.

Prof. Nihart, of White City, has been employed as Superintendent of the Herrington Schools for the next year at a salary of \$150 per month.

Miss Rose Kinney, a classmate of Pres. and Mrs. Fairchild, is visiting friends in Manhattan, on her way to the Micronesian mission field.

Miss S. E. Warner, for sixteen years in charge of a mission school for girls in Puebla, Mexico, visited the College on Monday last in the company of Judge Pipher.

The boiler in Mechanics' Hall has been repaired, a boiler-maker from Topeka doing the work. The work of resetting is well under way, but fully two weeks yet will be required for the mortar to dry.

Mr. and Mrs. A. H. Stump, of Corning, Nemaha County, visited the College yesterday with a view to moving here for the education of their children. The beauty of the location and the town, and the equipment of the College quite captivated them.

The first mowing of the campus this week brought the proverbial rains that have annually accompanied this process since the recollection of the oldest Professor. Slight murmurs are heard of inquiry why this medicine for drouth was not applied earlier; but all are satisfied now with its results. The grounds and farm never looked in better trim than just now.

The sixth division of the Third-years gave orations to students, Faculty, and a host of visitors in Chapel yesterday afternoon. They are the following: S. N. Chaffee, "The Eight Hour Movement;" E. C. Thayer, "A Few Thoughts on the Wastes of Modern Civilization;" Lotta Short, "The Necessity for Recreation;" S. VanBlarcom, "The Work of the Norman;" R. D. Whaley, "The Relation of Manual Training to Mental Culture."

The publishers of the *Rural New Yorker* and the *American Garden* make the following offer: "Any young man who (with the aid of his friends) will send us 200 subscriptions at \$2.00 each, to either publication (or the two combined) before the time of the fall examinations, will have his necessary expenses at the Agricultural College for the year following paid by the Rural Publishing Co." Young women are also included in the offer. Territory will be secured to applicants who send a certificate of abilities and character at once. This is a premium worth working for.

The following topics for theses have been chosen by the members of the Class in Political Economy this year: Wealth in relation to welfare; Capital, its place in production; Effects of improved locomotion upon production of wealth; Effects of modern facilities for communication upon consumption and prices; Effects of labor-saving machinery upon production and distribution of wealth; Laws of the State restricting corporations; Nature of trusts, and proposed measures for restriction; The inter-State Commerce Commission, and its work; The advantages and disadvantages of government control of all transportation; The probable effect upon agriculture in this State if all transportation were free; Advantages and disadvantages of co-operative industries; History of a noted

strike, with a summary of causes and effects; Co-operative stores, essentials of success, causes of failure; The eight-hour question, its relation to wages; Taxation of notes and mortgages, its effect on borrowers; Government debts, history of U. S. debt; City and county aid to special enterprises; City water-works and gas provision; Some causes of low prices of farm products in 1889-90.

Clubs from the Senior Class and College Officers engaged in a game of base-ball yesterday afternoon in the presence of about 500 spectators. The game was close and interesting from start to finish, terminating in a score of 18 to 19 in favor of the Seniors.

SENIORS.	POSITION.	OFFICERS.
Deweys.....	Pitcher.....	Thompson.....
Campbell.....	Catcher.....	Breese.....
Pfuetze.....	First Base.....	Popenoe.....
Morse.....	Second Base.....	McCreary.....
VanZile.....	Third Base.....	White.....
Snyder.....	Short Stop.....	Morrison.....
Sanders.....	Left Field.....	Marlatt.....
Stoker.....	Center Field.....	Olin.....
Borton.....	Right Field.....	Hood.....

GRADUATES AND FORMER STUDENTS.

Agnes E. Elliot, student in 1887-8, is visiting friends at the College.

E. A. Allen, '87, will be one of the Instructors in the Riley County Normal Institute, beginning June 9th.

A recent letter from D. G. Robertson, '86, dwells with enthusiasm upon the prospects for good crops upon his farm in Osborne County.

O. L. Utter will begin work next Wednesday as Assistant Farmer at the Chilocco Industrial School for Indians, Arkansas City, Kansas.

W. H. Olin, '89, is chosen to address the graduates of the El Dorado High School this year. He will also assist in the Wabaunsee County Normal Institute.

F. E. Way, Second-year in 1887-8, on his way home from Kansas City, where he had been with a car of cattle, could not resist the desire to visit the College yesterday.

W. B. Davis, a student from 1869 to 1872, writes from Wyoming, Iowa, where he is pastor of the M. E. Church, inquiring for records of his standing in scholarship.

COLLEGE LIVE-STOCK FOR SALE.

We call the attention of our readers to the fact that the Board of Regents of the College have authorized the sale of a number of Shorthorns and Jerseys from the College herd, which is deemed too large for the means of maintenance and the needs of the institution, numbering as it does upwards of 50 head. Among the Shorthorns offered for sale are thirteen cows and heifers and several very promising young bulls, all fine specimens of the breed that will prove valuable acquisitions to any herd. Here is a chance of getting some good foundation stock which breeders and admirers of good Shorthorns should not fail to improve. They will be sold at reasonable prices considering their breeding and individual merit. The cows have all been bred to Scottish Chief 89317, one of the finest Cruickshank bulls in the State, and the heifers offered are of his get. Several of the young cows are by the fine imported Cruickshank bull Thistletop, 83876, now in Colonel Harris's herd, Linwood, Kansas.

Among the Jerseys are several young cows, now getting into the prime of life, all of Herd-Book stock, which will be sold for \$75.00 each.

Persons who contemplate buying are cordially invited to visit the College and inspect the herd, and correspondence on the subject is solicited by the Professor of Agriculture, who will furnish all desired information in regard to prices and pedigrees.

COLLEGE SOCIETIES.

CHEMICAL LABORATORY, May 2 d.

The Scientific Club was called to order by President Hood. The Secretary, A. A. Mills, having been called to Utah as a member of the Faculty of the Utah Agricultural College, Miss Bertha Bacheller was elected Secretary.

The first paper, "Process Newspaper Cuts," was presented by Prof. Walters, in which he traced the growth of the process of making newspaper cuts from the time of Cinterfelter, 1837.

Two processes were spoken of at length; one in which a steel plate was covered with wax, the picture then scratched in the wax, and the plate etched; the other in which very fine chalk is used instead of the wax. The latter process, originated by Schraubstadter, makes very rapid work possible by allowing a stereotype to be taken directly from the plate, and is used by many of the leading newspapers. The discussion consisted of questions which were ably answered by Prof. Walters.

Mr. L. S. Strickler entertained the Club by showing them a fine collection of insects which he had made in New Mexico the previous summer.

Under the head of "Notes and Observations," Prof. Popenoe gave some interesting points upon the summer birds that had recently arrived.

Mr. J. T. Willard gratified those present by letting them taste a sample of beet sugar, which he had received from Medicine Lodge,

The diffusion process was said to give the best results. Four and one half acres of ground produced sixty-one tons of beets, which yielded ten thousand pounds of sugar. Great possibilities were predicted for Kansas in the line of the production of beet sugar.

B. H. B.

SOCIETY HALL, May 16th.

After devotion and roll-call, the Alpha Beta Society heard an oration by P. E. Westgate, and an essay by O. G. Harmon. "Resolved, That the United States constitution should be amended so as to compel every representative in Congress to vote when present," was the question for debate. Messrs. Thompson, Gilkinson, and Harner were chosen as Judges. As the first speaker on the affirmative was absent, Mr. Hutton was chosen to fill the vacancy. He said Congress should be a working society, and everybody should take an active interest in the work. If he is capable of forming an opinion, he should express it one way or the other. The House would be blocked, and the only thing to be done would be to adjourn, and notify the other members to come, as all action will be prevented by their not voting. The leader on the negative was G. L. Clothier, who thought that compelling a man to vote makes a mere machine of him, and takes away all originality. He gave, as an illustration, the result of the method used in our County Conventions. In regard to some questions, he might have religious scruples against casting his vote, and he should not be compelled to vote. The belief that our representatives are machines is the cause of the present retrogression in Congress. A man may do a great deal of work there without voting. We pay him to have a clear understanding of the bills, and the House ought not to act hastily. In many cases, bills are passed without consideration or discussion, and in passing bills in this way all responsibility is thrown on the President. Each house has a right to govern itself as it chooses, and to take away that power, limits the legislative department. Where would this tyranny cease? It would result in a monarchial government. Miss Cottrell was the next speaker on the affirmative. If each member was compelled to vote, the House would be great deal more forcible. Every member ought to be prepared to vote, as it is his privilege. They would have their own opinion on the subject, and ought to express it. Miss Gardiner continued the negative. She considered the question too trifling to take to the constitution. It would be like taking some trivial question about the College to the Board of Regents to settle. It is not right to compel a man to vote if he is not prepared, and often he doesn't want to decide without further consideration. W. W. Hutton closed the affirmative. In answering some of the arguments of the other side, he said that we make a machine of any man when we elect him to an office, by compelling him to be active. The State gives him a right to vote, otherwise if it were a sacred right, women would vote. People send men to represent them, and they want to be heard. He should be forced to act for his people. A Congressman has just as good a right to stay at home and be inactive. If it were a constitutional provision, then one party could not take the advantage of a weaker one. Mr. Clothier closed the negative. Representatives might have religious scruples about voting for war, and the old idea that the State is greater than the individual is the reason why the people have been crushed under foot. They must not do anything that will hinder the State's tyrannical work. It might be a great blessing if Congress did stay at home for a while, as there are so many laws now, none can know them all, yet ignorance is no excuse. The Judges felt unable to decide the question, and a motion was made to leave it to the Society. It was decided in favor of the affirmative. Miss Senn gave a well-read and edited paper, and deserves great credit for having done all the *Gleaner* work herself. After recess the usual programme was carried out.

J. M. S.

HAMILTON HALL, May 17th. T. D. Hogbin led the Hamilton Society in prayer. G. T. Morrison had for his declamation "The Deacon's Lament," and it was very well spoken. Essay by G. C. Seymour, relating some exciting adventure experienced in branding calves. R. J. Brock opened the discussion on the question, "Has religion been opposed to the advancement of science?" He spoke of the various wars that had been caused by religious differences, and the numerous persecutions which had resulted from religious superstitions. Many important discoveries were opposed, and by discouraging investigation and study, the popes sought to keep the people in that state of ignorance which would give to the church the great power. He referred to the history of various nations, showing how the religious belief of each had influenced its prosperity and fixed its destiny. In opening the discussion on the negative, U. G. Balderston spoke of the bitter prejudice which, in many cases, prevents a fair examination of the facts. It was in the monasteries, established by the church, that the germs of scientific knowledge were kept, until the revival in learning which marked the close of the Dark Ages allowed them to develop into modern science. It is not in the nation where infidelity is the rule that we find the greatest advancement in scientific knowledge. The benefit has been mutual, for the work in science has dispelled the superstitions surrounding religion, and left it pure. T. E. Lyontold of the opposition to the teaching of astronomy, geography, and other modern sciences. F. R. Smith said that many of the greatest scientists are believers in the Christian religion. The greatest infidels are not real scientists. It was not religion, but superstition, that caused the persecution of men like Galileo and Copernicus. After closing speeches by Messrs. Brock and Balderston, the Judges, Messrs. E. C. Coburn, W. L. Morse, and J. D. Riddell, decided that the negative had answered the argument of the affirmative. A. D. Rice then read the *Recorder*. He presented quite a number of interesting and amusing articles from the pens of Hamilton writers. They discussed improvements in Society work, told of experiences in Arkansas, related personal adventures, gave the history of an old artillery company, advertised the business of enterprising professional members, gave an account of a journey through Georgia, told the experiences of a new student at the Spring Term social, and gave the latest production of the "poetry grinder." The remainder of the programme was passed, and we entered the usual round of business, where our attention was occupied until the orders of the day were taken up and the Critic reported. The assignment to duty was then read, and the Society adjourned.

GILSTRAP.

IONIAN HALL, May 16th, 1890. The Ionian Society was called to order by President Houghton. Singing and devotion were followed by roll call. The programme was then taken up. Fanion Waugh rendered a piccolo solo in her usual pleasing manner after which Ida McConnell read a well-prepared essay with the lives of Alice and Phoebe Cary for her subject. Bertha Hederstrom recited a declamation entitled "The Lightning-rod Dispenser"; a very amusing and suggestive way. We then listened to a song, "Where the Wild Winds Sweep," by Misses Vail, Pierce, Wiest, and Hederstrom. The *Oracle*, edited by Miss Dora Skinner, was presented to an appreciative audience. It contained a number of well-written articles, among which was an instructive production entitled "Education." Another was a poem, "My Grandfather." "The Story by the Old Church Door" was a very pleasing contribution. Flora Wiest opened the discussion, "Should we have a news-girl in our Society," by presenting some excellent affirmative argument. The question was then discussed quite vigorously by the Society, and quite as many reasons for or against the subject were introduced, as there were members taking part in the discussion. The argument was closed by the Society's taking a vote upon the question, with a large majority in favor of the affirmative. The programme was closed with a duet, medley, by the Misses Hederstrom. The remainder of the session was devoted to business. Assignment of duties, reading of minutes, report of Critic, roll-call with quotations, adjournment.

E. GILSTRAP.

SOCIETY HALL, May 17th.

"Resolved, That the United States should improve her defences against sudden invasion* of any enemy," was the question which was agitated in the Webster Society. In trying to prove that they should be improved, Mr. Edleblute showed the present low state of our defences, which, although once adequate, have become utterly useless, on account of the improvements in the implements and methods of warfare. Our army and navy were contrasted with the armies and navies of Europe, and he found that any power of Europe could easily defeat our troops and take our cities. There are a dozen large cities on our coast with harbors which will admit the largest vessels, and these cities can be taken before any force for their defence can be got to them. Mr. Frost said that England would not dare to destroy any of our cities, as that would be only the beginning of war, which she has tried twice before and came out second best. The time has come when nations must have a reason for going to war. The United States does not want war, and no nation has a cause for it. On account of the improvements in war it has become too expensive, and arbitration is resorted to. War costs as much as we gain thereby, and there are more profitable ways of spending money. Mr. Town, on the affirmative admitted that we could raise an army in a short time, but when we have it, it is of no use till drilled. To prove that war may come at any time, he referred to our narrow escape from war in the last few years. Our cadets are too lazy to be of any good, and the citizens are not educated for war. Mr. Calvin said there is no power we need be afraid of, that is likely to become our enemy. We dehorned John Bull over a hundred years ago, and France and Russia are our friends. He said that the age of invasion is over, and in the Christian world arbitration has taken its place. If we should

be attacked by Eng and, we could retaliate on Canada. Our standing army may be "no good," but we don't need it. In closing the debate, Mr. Edelblute said that England always has been, and always will be, our enemy. In arbitration we yield our points too easily, and thus lose much. He also advocated the founding of more military schools. Mr. Frost said that if we increase the army, we increase the taxes and the losers. We lose much less by arbitration than by the devastations of war. The day of war is past. This is the age of arbitration. The Society decided by a vote of 22 to 5 that the negative had worried the question most. W. H. Sanders sang a solo which was heartily encored. B. H. Pugh read an interesting and instructive essay on "Mummies," detailing some of the recent discoveries in Egypt. In his oration on "Some Defects in our Society," John Morse gave a much needed reprimand to some members of our Society, who, evidently, have not the true Webster spirit. W. M. McCrea then settled the question of Woman's Rights. H. N. Whitford told of some of the peculiarities in the life and manners of Count Tolstoi. W. P. Tucker gave an exhaustive but interesting news report. The Society then launched out into the sea of business, and after an hour of restless tossing, the appearance of McCrea acted like oil on troubled waters. The great waves of passion subsided, and the ship of Society floated safely into the harbor of rest, at 10:40. McD.

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Collections of grains, grasses, and forage plants.

Buildings, stock, and equipments are valued at \$25,000.

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Small-fruit garden, with 200 varieties of small fruit, including blackberries, raspberries, gooseberries, currants, and strawberries; and vineyard, with 75 varieties of grapes.

Forest plantation of twelve acres, containing twenty varieties of from ten to fifteen years' growth.

Ornamental grounds, set with a variety of evergreens and deciduous trees. Sample rows, containing about 150 varieties of ornamental and useful shrubs and trees, labeled.

Vegetable garden, with hot-beds and cold-frames and experimental beds. Practice rows for students' budding, grafting, cultivating, and pruning.

Two well-planned and furnished greenhouses of three rooms each, stocked with a collection of native and exotic plants.

Museum, containing a collection of woods from American forests, and a large series of specimens in economic and general entomology. Value of property, exclusive of orchards and grounds, \$11,500.

Chemistry and Mineralogy.—Eight rooms, fitted with tables and apparatus for a class of eighty students in qualitative analysis, sixteen in quantitative analysis, including necessary facilities for assaying, with a mineralogical collection and general illustrative apparatus. Value, exclusive of building, \$7,500.

Botany.—A general herbarium, consisting of a large collection of plants of the United States and other countries; a Kansas herbarium, containing specimens illustrating the distribution and variation of plants throughout the State; also twenty-one compound microscopes, three dissecting microscopes, tools, reagents, wall-charts, etc. Valued at \$2,500.

Geology, Zoology, and Veterinary Science.—A general museum well fitted with cases containing valuable collections of mounted Kansas mammals and birds, with mounted skeletons of wild and domestic animals. The largest collection of Kansas fishes and molluscs in the State. Kansas reptiles and batrachians, salt-water fishes and invertebrates in alcohol. Collections of Mound-builders' and Indian relics. Kansas fossils and rocks, typical of the geological ages found in the State.

In Veterinary Science: A laboratory fitted with apparatus and reagents, for the study of disease. A collection of charts, models, and anatomical preparations, illustrating healthy and diseased structure. Value, \$4,500.

Drawing.—Models, plaster-casts, patterns, charts, easels, and implements. Valued at \$1,400.

Physics.—Physical apparatus, meteorological instruments, etc. Edelman's dynamo electric machine, with numerous accessories, sling psychrometer, and anemometer. The value of the whole is \$2,600.

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Mechanics and Engineering.—Carpenter shop, with separate benches and tools for forty-five students in each class, besides lathes, mortising machine, circular saws, band saws, planer, planer, friezer, boring machine, grinder, and general chest of tools for fine work. Power furnished by a ten-horse-power Atlas engine.

Shops for iron work, with forges, vises, drills, etc. Testing machine, charts, and models.

Inventory of material and apparatus in both shops, \$5,800.

Kitchen Laboratory, with ranges, cooking utensils, dining-room furnishings, dairy furniture; valued at \$600.

Printing.—Office, with thirty pairs of cases, large fonts of six point, eight-point, ten-point, and eleven-point Roman type; a good assortment of job type and brass rule; a Babcock cylinder press with steam power, Gordon job press; a mitering machine, a rule curving machine, and a paper cutter. Value of equipment, \$3,500.

Telegraphy.—Office, with five miles of line, connecting twenty branch offices, and as many instruments. Inventory, \$1,000.

Sewing Rooms, with six machines, models, patterns, and cases; worth \$550.

Music Rooms, with four pianos, four organs, and other instruments; valued at \$1,500.

A Library, carefully selected and catalogued, containing over 9,000 bound volumes, and 2,500 pamphlets. A reading-room is maintained in connection with the library, where may be found on file forty-five of the leading literary, scientific, technical, and agricultural periodicals, and several hundred newspapers, including the principal daily and county papers from all parts of the State. Value of library, \$15,000.

Armory, containing one hundred and fifty stands of arms (breech-loading cadet rifles, caliber .45), with accoutrements; two three-inch rifled guns; also swords, uniforms, etc. Value, exclusive of arms, \$800.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

EDUCATIONAL MEETINGS.
Washburn College Commencement, June 6th to 18th.
Kansas Chautauqua Assembly, Topeka, June 24th to July 4th.
Deaf and Dumb Institute Commencement, Olathe, May 31st to June 9th.
Agricultural College Commencement, June 7th to 11th.
Ottawa Chautauqua Assembly, June 17th to 27th.
State Normal School Commencement, June 9th to 12th.

Hutchinson has voted bonds for a \$50,000 school-building.

Seven hundred people were present at the graduating exercises of the Delphos High School.

The annual address before the literary societies at Emporia College this year will be delivered by Rev. Dr. A. A. E. Taylor, of St. Louis.

Normal Institute of Mitchell County will be held in Beloit in the High School building beginning Monday, June 9, 1890. F. C. Perkins is Conductor and W. W. Reed Instructor.

Several new plaster casts have been added to the Art Department of the Wesleyan University at Salina, among them being casts of Hercules, Achilles, Homer, and the Venus of Milo.

The annual normal institute of Dickinson County will open June 9th, and continue in session four weeks. Prof. W. M. Gray, of Beloit schools, will conduct, and D. F. Shirk, Chapman, and J. G. Wine, Hope, instruct.

Alma raised the stars and stripes over her public school building amidst the cheering of seven hundred pupils, the fanfares of a brass band, and the patriotic addresses of a number of its public speakers. Long may they float in the breeze.

Superintendent C. Y. Roop of the Salina schools will conduct the Salina County Institute beginning June 9th. He will be assisted by T. J. Rollman of Brookville, W. F. Adams of New Cambria, and Mrs. F. V. K. Menninger of Topeka.

The Pottawatomie County Normal Institute will be held at Westmoreland, June 9th to July 4th, 1890. Mr. William Wheeler will act as Conductor and R. N. Pemberton as Instructor. The board of examiners is composed of J. S. Mitchell, County Superintendent, G. G. Wheat, and R. N. Pemberton.

Ground has been broken for the new Catholic college at Belleville. The corner stone will be laid Sunday, June 8th, the Rt. Rev. Bishop Scammon of Concordia acting as master of ceremonies, and J. R. Burton of Abilene as principal orator. The main building will be 169x80 feet, three stories high, and will cost \$75,000.

The Labette County Normal Institute will be held in Oswego, commencing June 11th. Prof. T. W. Conway, Superintendent of Schools at Independence, has been engaged as Conductor, and Prof. Evelyn Baldwin, Principal in Oswego schools, and C. P. Hendershot, Superintendent of the schools at Sedan, will serve as Instructors.

There have been rumors for several years that the United Brethren of Kansas were planning a removal of their College at Lecompton to some larger city, and it seems now that the plan has taken definite shape. The Paola Republican says that the Church has applied to remove the institution to Paola, if Paola will assist in building the necessary quarters.

The oration with which Mr. A. C. Douglass, of Holton, won the Monmouth local and the Illinois State Contest and took second place in the Inter-State Contest last month, is on 'Our English Language.' It has been a popular belief among students that an oration, to be successful, must deal with a political theme—a belief which would appear to be contradicted by the success of this oration. In 1884, indeed, the subject of the winning Inter-State oration was still more out of the common run—"Judas Iscariot."

The Alumni catalogue of the State University, just issued, gives the whole number of graduates as 233, of whom 146 are men, and 87 are women. Of these, 64 of the men and 42 of the women are married. Of degrees there are Bachelors of Arts, 129; Bachelors of Science, 59; Masters of Arts, 24; Masters of Science, 13; Bachelors of Didactics, 19; Bachelors of Civil Engineering, 8; Doctors of Science, 1; Doctors of Philosophy, 1; of these, the number counted twice is 21. Their residences are distributed as follows: Kansas, 142; Missouri, 15; Colorado, 8; Washington, 6; District of Columbia, 9; Texas, 5; Illinois, 5; Pennsylvania, 4; Indian Territory, 4; Iowa, 4; California,

Indiana, New York, Montana, and Nebraska, 3 each; New Mexico, Utah, Massachusetts, and Ohio, 2 each; and Arizona, Michigan, Maryland, Mexico, and China, 1 each. Six only are in the roll of the dead. As to occupations, they are distributed as follows: Teachers, 55; Lawyers, 32; Civil Engineers, 17; Journalists, 10; Ministers, 10; Students, 16; Physicians, 8; Merchants, 6; Farmers, 6; Druggists, 5; Bankers, 3; Miscellaneous, 26. Of these, 12 are counted twice.

Last Monday at Clay Center three thousand people celebrated the raising of the flag offered by the *Youth's Companion* to the Kansas pupil writing the best essay on the "Patriotic Influence of the American Flag When Raised over the Public Schools." The prize was won by Will Long, a Kansas boy. Governor Humphrey and Chancellor Snow delivered addresses. Amid tremendous cheering the Governor pulled the flag to the top of the pole, where it now flies.

Prof. George B. Penny, of the State Normal School, will succeed Prof. McDonald as Dean of the School of Music of the State University. Prof. Penny was graduated from Cornell University in 1885. Since then he has studied at Syracuse University and in England, France, and Germany. He has, since graduating, held professorships at Girton Seminary and Dalhousie College, Halifax, and at the Metropolitan Conservatory, New York City. Two years ago Prof. Penny was called to the chair of music where he is leading now.

Good order does not require pupils to occupy for a long time, a fixed position, nor to fix their eyes upon a given point, nor to be as motionless as statues. All this is unnatural, and much of it positively injurious; and whatever is unnatural is not good order. The posture of the pupil should be graceful, easy, and uniform, and should be frequently changed. The movements, while as simultaneous as perfect attention would necessarily produce, should also be easy and natural. Intelligent attention, prompt and willing obedience, with quiet and orderly movements, are the chief requisites of good order.—*Supt. John Cooper, Leavenworth Schools.*

Oswego College for Young Ladies will graduate its first Senior Class this year. The Commencement exercises will occur June 8th to 11th. Baccalaureate sermon on Sabbath evening, June 8th, by Rev. Dr. Drake, of Humboldt, Kansas. Class-day exercises Tuesday morning in the College Hall. Art exhibition at the College on Tuesday and Wednesday afternoons, June 10th and 11th. Annual Concert at the Opera House, Tuesday evening. Commencement exercises on Wednesday morning at 11 o'clock at the Presbyterian church. Annual address to be delivered by Rev. E. C. Ray, D. D., of Topeka, Kansas. Reception in college parlors on Wednesday evening.—*Kansas Presbyter.*

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GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

THE COLLEGE CATALOGUE FOR 1889-90.

BY PROF. FRANCIS H. WHITE.

THE Catalogue soon to be issued will contain eight cuts: a view of the main building; a general view of grounds and buildings taken from the northeast; six interior views showing the students at work in the Carpenter Shop, Chemical Laboratory, Cooking School, Printing Office, Sewing Room, and Drawing Room. A few moments' study of the pictures will place those interested in possession of facts in regard to our methods, apparatus, and facilities that scarcely could have been obtained from the most skillful word-painting. This is an age of pictures, of graphic representations, and we willingly yield to the popular demand.

The Greenhouse, with its masses of flowers and foliage, is especially attractive at the present time, and we regret that an interior view of it could not be exhibited; and also that, in taking the general view, the large farm barn could not be included with the other buildings. The cuts were made from photographs by the new photo-engraving process.

Of course the Alumni, who have their triennial gathering at this Commencement, will be interested in the list of graduates which will appear in the back of the Catalogue. This list has not been published for several years, and has not had a place in the Catalogue since 1885. Quite a number of changes have been made in addresses, and a large number of graduates have been added.

The question, "What becomes of your graduates?" is frequently asked. The answer may be found by turning to the summary at the end of the list, and which we also append to this article. It will be seen that by far the larger number are engaged in farming or kindred pursuits, and comparatively few enter the professions. The rather large number of school teachers is made up chiefly of very recent graduates, who find it advantageous to teach a year or so before entering upon their life work. The great majority of the occupations, it will be noted, are industrial, which proves conclusively that this College does not educate students away from occupations requiring manual labor.

Special attention should be called to the fact that a very large number of our students do not complete the four-years' course. After from three months to three years with us, they leave in order to take advantage of some opening, or are compelled to return to their homes to help their parents. Of the present employment of such we have no record, but there is no doubt that nearly all of them are engaged in industrial occupations.

Of the 138 men who have graduated from this College, four are deceased, and the remainder are reported in the following occupations: Farmers, 25; fruit-growers and nurserymen, 4; stock-raisers, 3; assistants in Agricultural Experiment Stations, 4; assistants in United States Department of Agriculture, 2; teachers and students of special sciences, 9; veterinary surgeon, 1; editor of agricultural paper, 1; mechanics, 6; civil, electrical, and mechanical engineers, 9; contractors and builders, 2; architects and draughtsmen, 3; general business men, 22; printers, 4; superintendents of public schools, 5; teachers in public schools, 11; students in other institutions, 5; officers in Army, 2; observers in Signal Service, 1; physicians and students of medicine, 4; dentist, 1; editors, 4; ministers, 4; lawyers and students of law, 14. Total, 146; in two occupations, 12.

Of the 67 women, three are deceased, and the remainder are occupied as follows: Housewives,

29; at home, 5; teachers in public schools, 15; teachers and students of special sciences, 6; teachers of music, 3; teacher of art, 1; clerks or stenographers, 2; printer, 1; milliner and dressmaker, 1; assistant librarian, 1. Total, 64.

PRUNING SHADE TREES.

BY PROF. D. E. LANTZ.

A WELL-BALANCED forest tree standing in its proper place upon the lawn or along the highway will, during its life-time, be a source of pleasure to many people. But much of this pleasure will be denied if, by reason of want of knowledge on the part of the grower, the symmetry of the tree is destroyed, or its period of life lessened by improper treatment.

In observing the results of experiments in tree-growing in our villages, I have seen more failures result from improper pruning than from any other one cause. I have seen the owner of a village lot, intent upon success in his undertaking, dig large holes, plant with great care, and water freely; and yet forget that the diminished root surface of the tree cannot sustain all the branches already upon the top. In a dry season, this neglect of pruning is most likely to be followed by the death of the tree.

But more frequently the pruning is done by persons who, although skillful, are entirely ignorant of correct methods of trimming. They have theories of their own which they regard as infallible, and they resent any attempt to teach them better methods. It is unfortunate for the people of any village where these persons reside that they usually regard themselves as an authority upon such matters, and that much of the care of both shade and fruit trees is entrusted to them.

One of the most common of the errors to which I refer is the idea that a branch which is to be removed should be cut one or two inches from the trunk, leaving a stub. When these people are asked why they trim in this manner, they say that it leaves less surface for the bark to grow over. An examination of these stubs two or three years later will reveal a dead place extending deeply into the wood and doing permanent injury to the tree. On the other hand, a considerable branch may be removed from a thrifty tree, if cut close up to the trunk, and the scar will grow over in a single season.

After a tree is once started in a permanent place, it ought not to be severely pruned. During the first season of growth there is often a tendency to put out new shoots along the trunk. These must be removed, but they can easily be rubbed off when they first appear. If left, there is a tendency of the part above these shoots to die. At least, they will lack vigor, and make but little growth.

A common mistake in pruning is that of cutting the tops out of large trees. The finest trees are those that grow in the natural form. Any attempt to make a dwarf of a tree by pruning is unnatural, and shows want of taste, horticulturally speaking. Evergreens especially should not have the tops removed, unless they are grown in a hedge.

If our village people will not plant shade trees so close together, they will not show the common tendency to grow tall. The natural shape of a tree is not its shape as seen in a crowded forest, but its shape when growing freely in an isolated position. It is under such conditions that any tree will be seen at its best, and be a source of the greatest pleasure to those who behold it and enjoy its shade.

So far this year 2,139 volumes have been added to the library of the State University.

FACTS SOUGHT IN THE CENSUS.

At the instigation of the Secretary of State, prompted by constant inquiries from the public, the Superintendent of the Census, Robert P. Porter, will shortly conduct a most careful investigation of the actual standing of the farmers throughout the country, as to the ownership or part ownership of their farms, the amount of mortgage thereon, if any, and the purpose for which this mortgage was incurred.

Every form of debt that can be possibly classed as a mortgage in any State, with the single exception of mechanics' liens, will be regarded as such. The division of farm and home ownership between the sexes, and the extent to which wives are owners, will be ascertained. Another very interesting fact which will be learned will be whether farm and home-owning is associated more with middle age, or with youth, or with old age, and the general beginning of the home-owning period of a man's life, whether those of foreign birth are generally tenants or demonstrate an ability to own. Probably the most important connection that can be made will be between farm and home-owning and tenancy and the occupation of owners and tenants. This relation may be looked upon as deciding what a man's prospects are of becoming owner of his home in the various occupations of industry and professional life. In short, every opportunity afforded by this census of obtaining information of a varied character regarding a popular subject will be taken advantage of to obtain the fullest details possible.

Work is now being prosecuted toward ascertaining the number of people who own farms and homes, and the amount of the mortgage indebtedness thereon. This work was begun last summer, but the later act authorizing this more extensive census will embody the work now in progress. In Cattaraugus County, New York, where the work of experimenting on this search was commenced, it has been shown with a degree of accuracy that only eight-tenths of one per cent of the total debt represented by mortgages recorded prior to 1869 remain unpaid. This showed that it would not be necessary in localities where the conditions are the same as in this particular County to extend the scope of investigation beyond twenty years next preceding the investigation. Relative to the causes for incurring mortgages, shown by percentages, in nine towns in Cattaraugus County, the subjoined interesting table was prepared:

For purchase money.....	\$54.55
For improvements.....	17.30
To pay previous mortgages.....	1.81
To pay debts.....	1.38
To use in business.....	1.98
To secure endorsements.....	1.40
To raise money for investment.....	0.60
To sink oil wells.....	0.29
To secure annuities.....	0.25
To pay off heirs.....	0.16
For support and family expenses.....	0.14
Sickness.....	0.10
Extravagance.....	0.14
Speculation.....	0.08
Miscellaneous.....	0.30
No motive ascertained.....	10.76
Total.....	\$100.00

Under the plan of investigation adopted by the census office to ascertain the recorded indebtedness, the results to be obtained are, substantially:

The financial transactions of the people as far as indicated by recorded mortgages for the years 1880 to 1889; the number of acres of agricultural land and the number of real estate holdings by States and minor civil divisions which have been mortgaged in each year, and the amount of mortgage debt placed on these two classes of real estate by years and counties.

The amount of mortgage debt existing January 1st, 1890, upon agricultural land, village and city real estate.

The rates of interest paid on debts secured by real estate, the total interest charged together with the average rate.

The average duration of a mortgage debt.—*Kansas City Times.*

THE CHURN TEST.

All butter dairyman are particularly and peculiarly interested in the maintenance of the churn standard. For the practical dairyman no instrument has yet been invented that equals the churn for testing the butter value of milk or cream. Whether the butter extractor is to prove an exception to this statement, remains to be seen. Of the many methods recently discovered, each and all may be mathematically accurate in the hands of the chemists, or others who have learned to use them, and for the settlement of the chemical composition of different samples of milk they are unquestionably of great value, but, so far as I can

learn, not one of them agrees with the churn. Now, the churn is the only instrument in use wherewith butter is gotten out of milk. So long as this condition prevails, all tests that do not agree with the churn are practically valueless to the dairyman. Until some process is introduced that will do the work of the churn better than the churn does it, the churn will remain the only practical standard. So far as I have seen, all the new-fashioned tests deal with very small samples of milk.

All dairymen, whether owners of Jersey cows or not, are interested, but the owners of Jersey cows are peculiarly interested, in maintaining the standard of the churn until something better is invented. It is a recognized fact that the churn gets a larger proportion of butter out of Jersey milk than out of any other milk. This fact has been brought out in stronger relief during the past season at shows than it ever was before at public trials. At a number of fairs, Holstein cows have been awarded premiums over Jersey cows for butter, and in every instance, as far as I can remember, the test was made by some one of the chemical methods, and not by the churn. Hence we find Jerseys beaten frequently in butter competition when no butter was made.—*Jersey Bulletin.*

COMPOSITION OF AMERICAN PRIZE BUTTER.

From the report of Professors Morrow, Henry, and Armsby, a Special Committee appointed by the Association of Agricultural Colleges and Experiment Stations, we condense the following results of analyses of nine samples of sweepstakes, or first-prize butter, at the American Dairy Show held in Chicago, November, 1889:

"A set of these samples was analyzed by each of the following chemists: Dr. H. W. Wiley of the U. S. Dept. of Agriculture; D. E. H. Jenkins of the Conn. Experiment Station; Dr. A. G. Manns of the Illinois Experiment Station; Prof. M. A. Scovil of the Kentucky Experiment Station; Dr. S. M. Babcock of the Wisconsin Experiment Station, except that an accident prevented the analysis by Dr. Babcock, of the sample from lot number eight.

PRIZE SAMPLES OF BUTTER.	*RATING FOR AWARD OF PRIZES.				AVERAGE OF CHEMICAL ANALYSIS.				
	Flavor.	Grain.	Color.	Salting.	Total.	Fat.	Water.	Ash.†	Curd.
1. Creamery, cream	43	28½	14½	10	96	85.41	9.99	3.58	1.01
2. do whole milk.	42	29	13½	9½	94	82.66	12.19	3.93	1.21
3. Dairy.	40	29	14	10	93	86.53	8.49	4.12	0.86
4. Grade cow	42	29	14½	10	95½	85.66	9.71	3.29	1.03
5. Jersey cow	39½	29	14	8½	91	88.08	8.99	2.13	0.79
6. Shorthorn cow.	41½	27½	13½	8½	91	84.79	12.07	1.79	1.32
7. Ayrshire cow.	40½	28½	14	10	92	89.53	9.33	3.32	0.81
8. Devon cow.	39½	28	14	8½	87	86.20	10.78	2.29	0.78
9. Holstein cow.	40	29	13½	10	92½	85.53	10.56	3.03	0.84
General average.					92½	85.74	10.23	3.05	0.90

*The standard of the scale of points was: Flavor, 45; grain, 30; color, 15; salting, 10; total, 100.

†Chiefly salt.

"The variation in the fat of these nine lots is less than 5.5 per cent. So far as appears from analysis, the percentage of fat in butter depends on the thoroughness with which the water and buttermilk are extracted, and the quantity of salt allowed to remain, and not on the breed of the cows, nor the mode of manufacture. The lot with the highest rating by the scale of points had a little less than the average per cent of fat. The average per cent of salt is not quite half that often put in American butter. The three lots which were rated lowest as to "salting," and which stood lowest in total rating, each had less than the average salt. The general average ought surely to approach the true standard of good butter."

EXHIBITORS.—1. Wm. H. Taylor, Davis Junction, Ill.; 2. I. F. Laing, Chicago, Ill.; 3. A. B. Spencer, Rockport, Ohio; 4. L. McDonough, Davis Junction, Ill.; 5. N. L. Smith, Lindenwood, Ohio; 6. P. L. Younker, Hampton, Ia.; 7. A. B. Spencer, Rockport, Ohio; 8. John Hudson, Moweaqua, Ill.; 9. R. Hawley, Belvidere, Ill.

A CURE FOR DIPHTHERIA.

The following remedy is said to be the best known; at least it is worth trying, for physicians seem powerless to cope with the disease successfully. At the first indications of diphtheria in the throat of a child, make the room close; then take a tin cup and pour into it a quantity of tar and turpentine, equal parts. Then hold the cup over the fire so as to fill the room with fumes. The little patient on inhaling the fumes will cough up and spit out all the membranous matter, and the diphtheria will pass off. The fumes of tar and turpentine loosen the matter in the throat, and thus afford the relief that has baffled the skill of physicians.—*Exchange.*

KANSAS THRIFT.

Winfield has a mineral paint factory.

Cattle continue to pour into Kansas from all directions.

According to an unknown exchange, Kansas has 110 creameries.

One of the Mound Valley gas wells has for eight years past flowed 50,400 cubic feet of gas a day without a break, and this, too, through 450 feet of salt water.

Elk County farmers will raise a good deal of flax this season. In the country north of Howard, almost every farmer has a fine field of flax, and the prospects for a good crop could not be more flattering.—*Howard Courant.*

The egg industry of Kansas is one that is worth more to the State than the iron industry is to many of the mineral-producing States. The value of the eggs shipped from Kansas reaches far into the millions. Many small towns in the State last month paid out from \$1,000 to \$10,000 a week for eggs. A single merchant at Marion last year paid 27,000 to the farmers in the surrounding country.—*State Journal.*

The Alma News has the following concerning progress of the work in the anthracite coal mines: "The new double hoisting engine and drum were received by the coal company the first of the week, and they will be placed in position during the next few weeks, preparatory to mining coal. Before sinking the shaft any deeper, the company proposes to prepare for mining the coal veins recently passed. The last vein will be operated on first. Mr. Limerick thinks the shaft struck the vein in a thin place, and that by drifting in a short distance it will run thicker. The first vein, he thinks, can also be mined profitably. In making these preparations, it will be necessary to remove the present sinking machinery."

What I started to say was that, taking advantage of our homestead law, men have taken land with no other capital than their brawn and muscle, borrowed money—often at a high rate of interest—to make improvements; and because the land don't pay itself out in two, three, or five years, they deride the country. Would these parties expect to go to merchandizing, to manufacturing boots and shoes, etc., wholly upon borrowed capital and expect the business to pay itself out, support a family, etc., especially when they had a very imperfect knowledge of the occupation? That is precisely what hundreds of men do expect of farming in Kansas and elsewhere, and because they do not understand their business or because of an unprofitable crop now and then, which cannot possibly be provided against, the interest falls due and unpaid, the mortgage is foreclosed, and another is added to the rank of the grumbler. I know of at least twenty men here in my own neighborhood who have bought land on credit; have improved their farms, built good houses and barns, improved their stock, and raised families, in fifteen to twenty years; and the farms, supplemented by good judgment, economy, and industry, have paid it all and left the owners worth from \$5,000 to \$15,000. What other business could do more?—*Leavenworth County (Kansas) Correspondent, Farm and Fireside.*

GREEN FEED FOR DRY TIMES.

Dairyman should not forget that pastures, however good now, cannot be relied on to furnish a sufficient supply of fresh green food for milch cows throughout the entire summer. Provision ought, therefore, to be made now for supplementing the pastures in time of drought. Sometimes the pastures are so dried up in summer by protracted drought that the cows lose flesh and the milk yield falls very low. A few acres of corn or sorghum put in now for the purpose of being fed green will tide over these dry seasons and prevent serious loss. The land near the barn is best suited to this purpose, because the corn can be handled more conveniently.—*Southern Live-Stock Journal.*

There are some things that are beyond the control of the farmer; but the breeding of scrub stock of any kind or condition is not one of them. Nor is the raising of scrub crops, the making of poor butter, having tumble-down barns or fences, a dirty house yard, too many mean curs, or an absence of fruit on the farm. These and many others are under his control.—*Colman's Rural World.*

CALENDAR.

1889-90.

Fall Term—September 12th to December 20th.
 Winter Term—January 7th to March 28th.
 Spring Term—March 31st to June 11th.
 June 11th, Commencement.
 1890-91.

Fall Term—September 11th to December 19th.

TO SCHOOL OFFICERS.

The College Loan Commissioner has funds to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioners and the State Agricultural College. Address Jno. E. Hessian, Loan Commissioner, Manhattan, Kan.

LOCAL MATTERS.

Mr. V. R. Andrus, of Kansas City, Missouri, was a pleasant caller on Tuesday last.

Prof. Popenoe is elected Vice-President for this State of the American Forestry Association.

In the absence of Rev. Mr. Milner, Prof. Brown officiated as clergyman in Memorial Day exercises.

Secretary Helm, of the State organization, Y. M. C. A., paid a pleasant visit to the College Association last Sunday.

Mr. J. P. Gamble, of Lansing, Kansas, spent last Sunday with his son in College, and visited the institution on Monday.

C. W. and J. L. Dial, First-years, are called home this week to take up work on the farm, which has been deserted by their renters.

The botanists finish the pleasant task of collecting today, the greater number of them visiting the vicinity of St. George in search of ferns.

The Third-years and Second-years played a game of ball on Thursday which resulted in victory for the former by a score of 17 to 15.

Misses Mary and Mattie Kemp, Second-years, return to their former home in Indiana next week, not expecting to continue their course here.

Mrs. Agnes Fairchild Kirshner is visiting her parents this week, not because Salina is less beautiful in this May day adornment, but because Manhattan is more so.

Mr. T. T. Hawkes, ex-Superintendent of Shops, was in town for a few days last week on his way to New York, where, rumor has it, he will take unto himself a wife to cheer his home in Little Rock, Arkansas.

The College Quartette and a semi-chorus of twenty voices from the ranks of the students took part in the musical exercises of Decoration Day, under leadership of Prof. Brown. The music was highly complimented.

The issue of the Annual Report of the Experiment Station is still delayed, although the printers are pushing forward the work as rapidly as accuracy of proof-reading will allow. It will be a handsome volume of about three hundred pages.

Mr. W. E. Moore, of Cameron, Missouri, spent Wednesday in looking through the College and its work, having brought from his extra fine herd of Holstein cattle three of the best for the College herd. A full description of these cattle will be given.

Prof. Kellerman spent Saturday, Sunday, and Monday last in St. Louis, called there by a meeting of botanists in the famous Shaw gardens in commemoration of their originator. He reports a delightful visit to the gardens, and a profitable meeting.

A delightfully refreshing rain Thursday night and Friday morning "filled a long felt want," but put a damper upon the exercises of Decoration Day. The Cadets, after a good deal of hesitation and waiting, decided to abandon their share in the procession.

The College buildings were closed on Friday, Decoration Day, and the place would have had almost the solemnity of Sunday but for members of the Faculty and Station workers who found opportunity to put in a few hours extra on account of relief from the daily routine.

The annual Commencement invitations are out, and the general greeting is extended to all friends of the College to come and bring their friends with them. The series of entertainments begins Saturday evening, June 7th, and each day until Wednesday provides a treat of some kind for the public. On account of the expected crowd, it is necessary to announce that children under twelve

years of age will not be admitted to any of these College exercises, except as the graduates of Commencement Day may make special arrangements for their brothers and sisters at the graduating exercises. Parents who cannot leave their children at home must provide for their safe keeping outside the Chapel.

Pres. Fairchild and Prof. Georgeson report a pleasant trip last week to Cameron, Missouri, for selection of a trio of Holstein cattle to represent that breed in the College herd. Prof. Georgeson visited, on the way, the famous Shorthorn herd of Col. Harris at Linwood, Kansas.

The ladies of the Episcopal Church of Manhattan will set tables in the Armory on Commencement Day, and furnish dinner to all comers at the usual price of thirty-five cents. They will also dispense ice cream and strawberries at outside stands during the day, all for a consideration.

A new drive has just been opened alongside the tree-bordered stream in the northeast corner of the grounds, and the old gate which has so long stood idle opposite the gulch on the south side of the farm will be moved to connect this new roadway with the street at a point a short distance north of the old farmhouse.

On Thursday evening, while Secy. Graham and children were out riding, the horse stopped suddenly on account of an obstruction in the road, and Ardi, the youngest child, was pitched head foremost over the dash-board, and one wheel of the heavy surrey passed over his head. Fortunately, the little fellow escaped with a few bruises, none of which are serious.

We heard last week of a young man who, after taking two years at the Agricultural College, persuaded his father to turn over to him for one year the charge of the farm which the father had been carrying on for years under a heavy debt; and the result was that in one year he lifted the entire debt of twenty-five hundred dollars and had stock enough left for a fair start.—*Manhattan Nationalist*.

Major J. P. Sanger, Inspector General, U. S. A., spent part of Monday and Tuesday this week in the annual inspection of our Military Department. Evidently the work is a definite business with the Major, and was carried through earnestly and efficiently. The Cadets, under Lieut. Morrison's command, were two hours under review, and received the commendation of being well up in battalion movements.

The Alumni Reunion this year bids fair to be the largest and most interesting in the history of the College. The programme of exercises on Wednesday, June 11th, is as follows: Public exercises in the Chapel at 4 p. m.—Address, Marion F. Leisure, Class of '77; Poem, John W. VanDeventer, Class of '86; History, Sam Kimble, Class of '73. Business meeting follows the public exercises. Reunion, Reception Room, 7:30 p. m.; Banquet, 8 to 9 p. m.; Toasts, 9—? With Miss E. Ada Little, '86, to cater for musical tastes, and Mrs. Nellie S. Kedzie, '76, to cater for tastes gastronomic, the interims between the "feast of reason and the flow of soul" cannot but be well filled.

GRADUATES AND FORMER STUDENTS.

P. M. Kokanour, Third-year in 1885-86, sends a copy of his new paper from Lake Arthur, Louisiana.

J. Frazier, student in 1886-87, visited his sister at College over Sunday. He has been teaching the past year.

Messrs. W. E. Whaley, '86, E. O. Sisson, '86, and E. A. Allen, '87, were callers upon Alma Mater last week Friday.

Mrs. Kate Selden Stebbins, student in 1880-81, visited last week at the home of her cousins, Mr. and Mrs. J. T. Willard.

W. E. Whaley, '86, is re-elected to a third years' charge of Manhattan Schools, with a welcome increase of a hundred dollars in the salary.

Miss Mary Mecham, student in 1882-83, writes as Superintendent of the Spring Hill Schools, asking recognition in the new plan of admission upon certificate.

J. Dana Needham, '83, after long silence, writes from Lane, Kansas, to inform old friends of his marriage, May 11th, at the residence of the bride's parents, near Westphalia, Kansas, to Miss Retta Grant.

COLLEGE LIVE-STOCK FOR SALE.

We call the attention of our readers to the fact that the Board of Regents of the College have authorized the sale of a number of Shorthorns and Jerseys from the College herd, which is deemed too large for the means of maintenance and the needs of the institution, numbering as it does upwards of 50 head. Among the Shorthorns offered for sale are thirteen cows and heifers and several very promising young bulls, all fine specimens of the breed that will prove valuable acquisition to any herd. Here is a chance of getting some good foundation stock which breeders and admirers of good Shorthorns should not fail to improve. They will be sold at reasonable prices considering their breeding and individual merit. The cows have all been bred to Scottish Chief 89317, one of the finest Cruickshank bulls in the State, and the heifers offered are of his get. Several of the young cows are by the fine imported Cruickshank bull Thistle-top, 83876, now in Colonel Harris's herd, Linwood, Kansas.

Among the Jerseys are several young cows, now getting into the prime of life, all of Herd-Book stock, which will be sold for \$75.00 each.

Persons who contemplate buying are cordially invited to visit the College and inspect the herd, and correspondence on the subject is solicited by the Professor of Agriculture, who will furnish all desired information in regard to prices and pedigrees.

COLLEGE SOCIETIES.

SOCIETY HALL, May 24th. The debate of the Webster Society on the evening of the 24th was upon the question, "Resolved, That the recent decision of the United States Supreme Court should be sustained." Mr. T. C. Davis being absent, Mr. Whitford was chosen to fill the vacancy. The debate was opened on the affirmative by R. D. Brown, who spoke upon the nature of the late decision and its relation to the prohibitory law. Mr. L. S. Harner, after answering the first speaker, said that no question save commercial, political, or economical had been considered in rendering this decision, but questions of morality as well as those of public health should receive attention also. Mr. Whitford then spoke of the dignity of the Supreme Court and our duty to recognize their position and abide by their decision. He also spoke of the relation of the decision to Inter State Commerce and concluded that it should be upheld. Mr. A. E. Campbell discussed the moral phase of the question. It is introduction of intemperance, said he, and for this reason if no other it should not be sustained. Mr. Brown then closed the argument by answering previous points of his opponents and strengthening his own arguments, after which Mr. Harner closed the debate on the negative by saying that we are not bound to sustain decisions of the supreme Court that are productive of evil, simply because it is rendered by the Supreme Court. He also dwelt upon the fact that the people and not the Supreme Court are the supreme power, and that efforts should be made to have the decision reversed, if possible. The Society then decided twenty to twelve in favor of the negative, after which the Society listened to a declamation by Mr. Davis. The essay by Mr. Dorman on "Erolites" was unusually interesting and instructive, so also was the essay upon the "The Signal Service" by Mr. Gentes, in which he traced its growth and spoke of its relation to the welfare of our people, and Mr. Pfuetze's essay on "The growth of the manual training school and its relation to manufacturing industries. The Society then listened to a solo by W. H. Sanders, title "Far away." Mr. Milner then presented The Webster Reporter, a model paper. Wit and wisdom nicely balanced showed judgment in selected articles by the editor of which articles the following are some: "Evils of the Jury System," Poem entitled "The Junior," "A Disease," "Glimpses of the Continent," an interesting story of German life, mode of traveling, manners, and customs, poem, "A Contribution," "Troubles of Two Fourth-years." Mr. G. K. Helder favored the Society with a piece of instrumental music, "Clayton's Grand March," after which the Society adjourned.

WIMER.

HAMILTON HALL, May 24th. "The Lone Indian" was title of the declamation with which Chas. W. Hartley opened the programme. After that came the debate, George Wilden and Albert Martin affirming and Harry Gilstrap and Will Anderson denying that the annual undergraduates' exhibition should be continued. The affirmative claimed that the exhibition is an advantage because it represented the Junior class in the exercises of Commencement Week, and give an opportunity for comparing Junior orations with other productions of like nature. Since the honor of representing the class depends on individual standing, an incentive is given to extra effort in class work. It benefits the members who take part in the programme by giving them the training that comes through preparation. The negative speakers thought that the advantage might be claimed that the exhibition furnished a source of entertainment, but without it there is enough to occupy the students' attention during examination week. It may benefit the members taking part, but the exhibition should not be continued on this account, for such a plan would give to the few the training of which the majority were deprived. It is doubtful whether any one is benefited, for the speakers are likely to neglect other work in preparing for the exhibition. Oratorical effort can be stimulated better by contests, and the student who has no higher motive in studying than the hope of securing such grades as will make him an undergraduate speaker is not a true student. The greatest objection to the exhibition is the dissatisfaction which always prevails over the choice of representatives. It is not confined to disappointed candidates for undergraduate honors, but is common, and an institution must bring greater benefits than an undergraduates' exhibition can show in order to compensate for the hard feeling caused by it. When the debate was finished the decision was left to the Society, and by a large majority it decided that the negative had answered the argument of the affirmative. After a ten minutes' recess, the programme was continued. Music, a violin duet, by Frank Waugh and Clay Coburn. In the essay which Walter Towne read, he told of the life and work of Cromwell. Frank Lincoln's oration was on the financial depression among farmers, the probable causes, and possible remedies. A discussion by Sam Van Blarcom closed the programme.

GILSTRAP.

INDUSTRIAL TRAINING.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have Farming, Gardening and Fruit-growing, Carpentry, Cabinet-making, Iron-work, Printing, or Telegraphy. Young women may take Sewing, Printing, Telegraphy, Floriculture, or Music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second year and the fall term of the third year, upon the farm, gardens, and orchards. Young women take their industrials for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and laundry.

THE INDUSTRIALIST.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

EDUCATIONAL MEETINGS.

Washburn College Commencement, June 6th to 18th.
 Kansas Chautauqua Assembly, Topeka, June 24th to July 4th.
 Deaf and Dumb Institute Commencement, Olathe, May 31st to June 9th.
 Agricultural College Commencement, June 7th to 11th.
 Ottawa Chautauqua Assembly, June 17th to 27th.
 State Normal School Commencement, June 9th to 12th.

Winfield has voted \$30,000 for a new school house.

The Olathe schools have graduated nineteen pupils this year.

The baseball team of Haskell Indian Institute at Lawrence is said to be the best in the State; at any rate they have scooped all the College teams of Eastern Kansas so far.

The gymnasium class of the Hutchinson schools gave a very satisfactory entertainment in the opera house on May 20th. The class is drilled by a professional instructor, Mr. C. D. Wherfel, of St. Joseph, Missouri.

Professors Ed. and Will Franklin, of the State University, will leave for Germany immediately after the close of school for an extended vacation trip. They will spend most of the summer in recreation among the Alps.

From the Baker *Beacon*, we learn that Dr. Hoss has resigned his chair at that institution. The paper does not state what he intends to do next. Dr. Hoss was at one time President of the State Normal School, and is the author of a number of educational publications.

The Clay County Teachers' Institute will begin on Monday, the 16th of June, in the High School building in Clay Center. Prof. John Deitrich, conductor; Prof. E. L. Cowdrick, half time, Prof. S. C. Bloss, half time, W. A. Stacey, half time, Prof. C. A. Murphy, half time instructors.

Exchange brings the news that the Farmers' Alliance of Thomas County has declared in favor of Prof. James Canfield of the University for Congressman in that district. The laws of Kansas make it possible for a man to be elected to Congress from a district in which he does not reside, as long as he is a resident of the State.

The alumni and former students of Ann Arbor residing in Kansas and Missouri held an annual reunion at the Coates House in Kansas City on May 23rd. The meeting was well attended by a large number of prominent men, among them Chief Justice A. H. Horton and A. A. Robinson, General Manager of the Santa Fe Railroad.

The Harper *Sentinel* publishes, side by side, a chapter from "Raub's School Management," and the paper of Miss Wells, the Superintendent of the Harper County Schools, read before the Convention of County Superintendents at Hutchinson, and shows that the latter document, as published in the Anthony *Journal*, is a verbatim copy, so to say, of the former. A more complete job of "cribbing" could hardly be imagined, and the request of the *Sentinel* for the resignation of Miss Wells, though severe, is quite in order.

The State Bible School of the Young Men's Christian Association will be held in camp at Emporia, June 10—19. The school will meet in a splendidly laid-out grove, situated on the banks of the Cottonwood river, within easy access of the city. Governor Humphrey has very kindly granted the use of the military tents, and the citizens of Emporia are sparing no pains to make the grove convenient and attractive. The railroads have granted one and one-third rates for the round trip, and the cost for board for ten days will not exceed \$5 or \$6.

The work in writing and drawing exhibited by the Manhattan schools at the close of the spring term was the best arranged and cleanest collection of the kind we ever saw, not excepting the usual exhibits of schools at the annual meetings of the National Educational Association. It covered every grade, including the colored classes. The work of every pupil was separately bound in strong manilla covers, decorated by himself in some tasty design, mostly in colors and no two alike. The Grange Hall, where the exhibition was held, was visited by large numbers of parents and school friends, and it may be safely said that the efforts put forth by Supt. Whaley and his able corps of teachers will bear rich fruits for years to come in an increased interest in educational matters on the part of school patrons.

COURSE OF STUDY.

The necessity for so adjusting various branches of a course of study that there shall be as little waste as possible in acquiring both information and discipline, is felt by every teacher. Such a course is not designed to be absolutely inflexible, but to guide the judgment into some definite line of progress from which no mere whim shall turn a student aside.

Each student is expected to take three studies besides one hour's practice in an industrial art; and variation from this rule can be made only with the consent of the Faculty.

Parallel courses are offered to both sexes, with such differences as their necessities seem to call for. The following gives the general scope . . . but fuller explanations are found in the Annual Catalogue.

FIRST YEAR.

Fall Term: Arithmetic, English Analysis, Geometrical Drawing, Industrial.

Winter Term: Book-keeping, English Structure, United States History, Free-hand Drawing three times a week, Industrial.

Spring Term: Algebra, English Composition, Botany, Industrial (Carpentry or Sewing).

SECOND YEAR.

Fall Term: Algebra completed, Elementary Chemistry, Horticulture, Industrial.

Winter Term: Geometry, Agriculture or Household Economy, Organic Chemistry and Mineralogy, Twelve Lectures in Military Science, Industrial (Cooking).

Spring Term: Geometry completed, Projection Drawing, Entomology, Analytical Chemistry, Twenty Lectures in Military Science, Industrial (Farm and Garden or Dairy).

THIRD YEAR.

Fall Term: Trigonometry and Surveying, Anatomy and Physiology, General History, Industrial (Farm and Garden).

Winter Term: Mechanics, Agricultural Chemistry, Rhetoric, Industrial.

Spring Term: Civil Engineering or Hygiene, Physics, English Literature, Perspective Drawing two hours a week, Industrial.

FOURTH YEAR.

Fall Term: Agriculture or Literature, Physics and Meteorology, Psychology, Industrial.

Winter Term: Logic, Deductive and Inductive, Zoology and Veterinary Science, Structural Botany, Industrial.

Spring Term: Geology, United States Constitution, Political Economy, Industrial.

The daily routine requires chapel at 8:30 A. M., and classes from 8:50 A. M. to 1 P. M., as shown under "Class Hours." Class rhetorical exercises are held weekly. Military drill is twice a week. On every Friday afternoon, at 1:30, all attend the public lecture, or rhetorical exercises in chapel.

Special Courses.—Persons of suitable age or advancement who desire to pursue such branches of study as are most directly related to agriculture or other industries may select such studies under the advice of the Faculty. Assaying and Pharmaceutical Chemistry may be provided for by special arrangement when students are qualified to pursue them.

Vocal Music.—All students are furnished instruction in vocal music free of charge, under direction of the Faculty. Classes meet on Mondays and Wednesdays for advanced pupils, and for beginners on Tuesdays and Thursdays, at 1:30 P. M. The advanced class shares in the music of public exercises during the Commencement week. This study is taken up at the choice of the student, but regular attendance is required as at other classes until excuse is granted.

Arrangements for special voice culture may be made with the Professor in charge, on reasonable terms.

Military Training.—During the second year, a course of thirty-two lectures is given. These are designed to show how an army is organized, equipped, and supplied, to explain some of the minor operations of war, to show the organization of the militia, and the militia law of this State. Instruction is afforded, to such as desire it, in other military subjects.

To those who desire it, an opportunity is given for practice in the ordinary infantry drill, including the school of the soldier, company, and battalion, and target practice. Although drill is thus made optional, students are not allowed to take it for periods shorter than one term. To obtain a proper proficiency, however, one should take the semi-weekly drill for at least a year.

EXPENSES.

Tuition is free, and no general fee for incidental or contingent expenses is charged. In a few special departments of instruction, the following payments are made in advance to the Secretary:

In the term of Analytical Chemistry, students pay \$3 for the chemicals and apparatus used in their laboratory practice and analysis.

In the Printing Office, young men, in their first year, pay \$3 a term for office expenses. Advanced students have the use of the office for the work performed during the industrial hours.

In Telegraphy, young men pay \$3 a term for office expenses.

Young women are furnished both Printing and Telegraphy free of expense, these two offices, with the Sewing and Cooking Departments, being provided especially for their industrial training.

Lessons in instrumental music—two a week—are from \$10 to \$15 a term, according to its length; one a week, \$6 to \$8.40. One-half is to be paid to the instructor in charge with the first lesson, the other half at the middle of the term.

The cost of text-books at the book stores is, for the first year, about \$4 a term; for the second year, \$2.75 a term; for the third year, \$7 a term; and for the fourth year, \$5.50 a term.

The expenses for apparatus and tools to each student during the course are as follows: Drawing, \$3.50; microscope for Botany and Entomology, \$1.50; case, pins, etc., for Entomology, \$2.25; rules, in carpentry 25 cents, printing 25 cents. The total expense for these articles during the four years is less than ten dollars.

Board and washing are not furnished by the College. Board, with furnished rooms, can be procured in private families at from \$2.75 to \$4 per week. Some students board themselves at even less cost; and rooms for the purpose can be obtained at a rent of from \$1 to \$3.50 a month. Washing costs from 50c. to \$1 a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$100 to \$200 a year.

USE OF COLLEGE TRAINING.

Mr. Carnegie's statement in the *Tribune*, that college education is fatal to success in business, has vastly more good than usually results from a foolish utterance by a wise man. It has called attention to a long list of educated men prominent in business life, and to the fact that successful business men, who have not had the advantages of education, usually seek them for their children. It has led men to emphasize the truths that money-getting is small success without skill to use it wisely for the public good; and that the college-bred man, as a rule, touches the life of the world at more points, with keener perceptions and more commanding influence, than the uneducated or self-trained.

Mr. Abram S. Hewitt, who from a poor boy has come to be a millionaire, says: "If I were offered a fortune without education, or an education without fortune, I should unhesitatingly accept the education." Mr. Depew says: "The college-bred man has a trained intellect, a disciplined mind, a store of information, and a breadth of grasp, with the fearlessness which it entails, that enables him to catch up and pass his rival." The sum of it all is that training must be practical as well as theoretical, and that the more the whole man is developed by careful training, the greater his usefulness and enjoyment in life. The aim to amass money is secondary to the aim of attaining a well-rounded manhood.—*The Congregationalist*.

LABOR AND EARNINGS.

Every encouragement is given to habits of daily manual labor during the College course. Only one hour of daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their abilities and means.

All labor at the College is under the direction of the Superintendents of the departments, and offers opportunity for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed.

The shops and offices are opened afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed—outside of required hours of labor—upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates varying with services rendered, from eight to ten cents an hour. The Superintendents strive to adjust their work to the necessities of students, and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay-roll for the past year ranges from \$250 to \$400.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term time, or from other sources, for the larger part of their expenses. The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

MANHATTAN ADVERTISEMENTS.

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PICKETT'S NEW LIVERY STABLE.—Everything new and strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

BATH ROOMS.—At Manhattan Shaving Parlor, South Second Street. Hot and cold baths always ready. Everything first-class. Special care taken with ladies' and children's hair cutting. Razors bought and sold. Give me a call. PETE HOSTRUP, Proprietor.

LESLIE H. SMITH, Boots and Shoes, 302 Poyntz Avenue, first door west of Stingley & Huntress. A full line of Rubber foot wear of the best quality at the lowest prices. Mens' all Solid Leather Dress Shoes, \$1.65. Ladies' Fine Dongola Button Shoes, \$2.00. Reliable goods at low prices.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds. Watches, Clocks, a magnificent line of Jewelry of the best makes. A big variety of Notions that students need. Musical Instruments, Strings, Sheet Music, Instruction Books. Our collection of Spectacles in gold, silver, and steel cannot be beat. Don't forget our ten-cent bargain counter. Everything at lowest living prices.—"75."

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GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 p. m., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

SUNDRY NOTES.

BY PROF. W. A. KELLERMAN.

THE last number of the *Journal of Mycology*, now issued by the United States Department of Agriculture, contains several articles of practical interest to those engaged in agriculture and horticulture. The first is a translation of an address by Dr. Brefeld, delivered before the Society of Agriculturists of Berlin, Germany, entitled "Recent Investigations of Smut Fungi and Smut Diseases." Reference to the main points of this article will be found in the Second Annual Report of the Kansas Experiment Station (1889), Botanical Department (not yet distributed). An interesting article is by A. A. Crozier on the "Effects of Certain Fungicides upon the Vitality of the Seeds." It includes an account of his experiments with blue vitriol upon corn and wheat, and copperas on corn.

B. T. Galloway, chief of the section of vegetable pathology, gives an account of his treatment for black rot, brown rot, downy mildew, powdery mildew, and anthracnose of grape; also pear scab and leaf blight, and apple powdery mildew. Mr. E. F. Smith, one of Mr. Galloway's assistants, tells what to do for peach yellows; S. T. Maynard contributes an article on the "Treatment of mildews upon plants under glass."

Other articles of interest to the people of this State are as follows: "Treatment of Apple Scab," by E. S. Goff; "The Copper Salts as Fungicides," by F. D. Chester; "Notes on Fungicides and a new Spraying Pump," by B. T. Galloway; "Prevention of Smut in Oats and other Cereals, by W. A. Kellerman and W. T. Swingle.

A new edition of Gray's Manual of Botany has been issued. The revision was only partially done by Gray before his death, and was continued and completed by S. Watson and J. M. Coulter. The work of the revisers has been severely criticised by many botanists, particularly in regard to questions pertaining to synonymy. Whatever may be said as to the indicated distribution elsewhere, it is greatly to be regretted that several species belonging to the eastern half of Kansas should have been omitted. Had this not been the case, the book might have been used with some satisfaction in the colleges of our State.

It is often stated that nearly all of our troublesome weeds are introduced species from Europe or other countries, and therefore not natives of this country. This statement can be verified or refuted by examining a correct list of the weeds from any section. There are a few troublesome weeds that are cosmopolitan, or at least grow in many countries, yet these are by no means one-half of those that the farmer and gardener most constantly make war upon.

Some of the widely distributed species that are adventives from other countries are the mullein, narrow-leaved plantain, burdock, yarrow, purslane, chess, crab-grass, fox-tail, etc. But do we not find the equal of these in the native ragweed, bitterweed, sand-bur, "loco," bull thistle, sour-dock, and others too numerous to mention? However, this matter should be looked into very carefully, and I will be glad to receive lists and samples of the troublesome weeds from any part of Kansas. A list of twelve or fifteen of the worst weeds is especially requested. Samples can be sent by rolling them in paper and transmitting by mail; the rate for which is one cent per ounce.

garden-pupils was recently inaugurated at the Shaw Botanical Garden, St. Louis, Mo. Each scholarship yields \$200 for the first year, \$250 for the second, and \$300 for each of the four succeeding years. The pupils work in the Garden ten hours a day for the first year, and read journals relating to floral and horticultural work. During the five succeeding years they will work only five hours daily in the garden. They will during these years receive instruction in such subjects as vegetable gardening, flower-gardening, botany, forestry, landscape gardening, vegetable physiology, economic entomology, mycology, and other subjects connected with the work of practical gardening. Provision is made for six pupils of whom five have already been appointed. They are furnished neat rooms free near the garden, and so far they have taken hold of their work with vigor and enthusiasm.

TWO NEIGHBORS.

BY SECY. I. D. GRAHAM.

THERE are two neighbors whose associations with the average American young man or young woman are most intimate, and whose influence for good or bad is almost unbounded. One of these is powerful for good or evil in the riches of learning, possessed by and offered to all. The other is powerful in possibilities. One of them is always at home upon the library shelves, and with pleasant face invites us to sit down and be neighborly.

They are a queer lot,—these neighbors in leather and cloth,—and they have, in some degree, the power of success or failure in life to us. As we shall have battled with the dangers of youth, the difficulties of mid-life, and decay of old age, shall we ever be made to fully realize just how much of the courage and strength which have placed us on the winning side in life might be traced to the influence of books we have read? Human friends grow old and die; other neighbors go away and cease to be neighbors; and friendships are too often short-lived; and, but for our books, from whose pages the confidence necessary to meet what life may have in store for us may come, life would profit us little.

In books, the thoughts of friends are common property, and men are our friends. From books, we gain something of our education, but not all. An omnivorous reader is not necessarily an educated man, though he may be a much better man by reason of his familiar acquaintance with these friends.

The other neighbor referred to is one with whom we are usually supposed to be upon the most neighborly terms, and yet for whom we show less respect than for many others; one without whose friendship we are most miserable, and yet whose love is disastrous to us; one for whose good we are sure to put forth our best efforts, and yet whom we treat, at times, with scant courtesy; one who offers us every incentive to be neighborly, but who rightfully complains of abuse. This one is *ourselves*. We should be neighborly with ourselves—not in that egotistic, large-headed sort of fashion which is so common; not in that selfish, look-out-for-number-one style so much affected by people of small capital in this direction; nor yet after the manner of those whose only aim is a good time; but in that large-minded and generous-hearted way which sees one's self as a valuable instrument for good only as it is made so, and which proves that the best work is done by the best tools, and the best results obtained by means of the best preparation. Being neighborly with one's self means that our life is good as our work is good. It means that a clean mind is as necessary as a clean body, and a good

A novel and important scheme of scholarships for

digestion as a good moral sense. It means that the one life which it is permitted us to live is worth doing our best in.

With these two neighbors properly cultivated and treated as they should be, the young man or young woman of today should have little to complain of in life, and more to be thankful for than most people have.

TESTING PRESSURE GAUGES.

BY PROF. O. P. HOOD.

SO DISASTROUS to life and property is a boiler explosion, that the possibility of failure is a constant thought in the mind of a good engineer. A poor one seldom realizes the amount of destruction he has confined inside an iron cylinder, even at low pressure, and is usually thoughtless of the exact condition of the boiler and appliances. By noticing for a considerable length of time the reports of explosions, it is found that every boiler explosion averages one man killed and two others more or less injured, besides a money loss much harder to arrive at. Explosions do not all occur under an evident high pressure, a most disastrous one having occurred with the pressure gauge reading but three pounds.

Boilers used in saw-mills usually furnish more explosions during the year than any other class, although the agricultural boiler would furnish a greater number if run constantly instead of the usual few weeks. In these two classes, the most reckless handling is found, and the explosions follow as a matter of course. There are many failures, however, which come from defects of construction and long misuse, as well as those resulting from a single act of ignorant recklessness. From reports of 1,012,290 inspections of boilers by a reliable insurance company since 1881, is found the fact that one boiler in every ten is dangerously defective. And these inspections are almost entirely of the better class of boilers, the owners of which can afford to pay a high insurance. It is very probable that at least one in every eight is dangerously defective, taking all classes into account. It is certainly well to discover who has the tenth boiler, at least.

It is usually a difficult matter to determine in just what way a boiler is defective, without a thoroughly competent inspection inside and out, on account of the very many ways in which it may be weak. On more than one boiler in every ten, a dangerously defective pressure gauge is found, giving a lying account of the pressure in the boiler, and falsely assuring the engineer of safety. While most of these defects lie in the connection of gauge and boiler, many of them arise from wrong indications on the face of the gauge itself. To be sure of a gauge, it should be tested occasionally by comparison with a standard gauge. On account of the expense of a test gauge and apparatus, it is usually difficult to do this. The Mechanical Department of this College offers to test any gauge up to 300 pounds, and furnish a corrected reading to any one who will send his gauge by express prepaid, and will give a description of its connection to the boiler. The gauge will be immediately returned. By this means it is hoped to reduce the number of gauges whose reading is dangerously defective.

FARM HELP AND WAGES.

There is a scarcity of farm help, even though the farmer does not intend to carry on any extensive operations. The first cause for this is found in the greater attraction of towns and villages, and the better wages and shorter days made by workmen in mills, quarries, etc. Where farmers employ a steady hand or two, and extra help by the day in busy periods of farm work, it is right and just for the hired man to demand, and the farmer should reasonably grant, a day of work as near to that which men make at mills and factories, as is consistent. There can be no reason

for a farmer working himself, or making his men work, sixteen hours a day, and then spend an hour at night in doing chores about the barn, stable, and yards. The men will be better contented, work more faithfully and cheerfully, and, in fact, accomplish more in such a day, than to work from "sun to sun." The farmer himself, or his boys, should leave the field at a reasonable hour at night, in order to clean up all the little odd jobs about the buildings, so that when the men "knock off" they may know their day's work is done. It is this interminable day which causes so many workmen to dislike the farm.—*Mirror and Farmer.*

COLLEGE COURSES FOR FARMERS.

Thousands of boys are sent to college; only now and then do we find a thorough who masters his studies so thoroughly and well that the world rushes to recognize him as leader. It seems to be almost a law of nature that only a small percentage of those who enter upon any chosen work have the faith and the courage to fight their way to the head. Before a boy starts at an agricultural college he should remember this fact. The strength of character, the inspiration, the habit of thought and observation may all be found there. The tools are there—he must provide the patience and the courage needed to sharpen them.

And does not agriculture to-day offer opportunities for the exercise of the best manhood, the best thought and the highest patriotism? Brave, skillful, honest men must be found to lead and to follow. We do not say that such men cannot be trained outside of these colleges—it would be nonsense to say that—but we do say that it is possible for a sensible, thoughtful young man to acquire at the best of these colleges habits of thought, investigation and work, which if rightly followed out will make him a power for good, and place him on an equality with trained men in other professions. Yes, at our agricultural colleges, just as they exist to-day, with all their faults and shortcomings, it is possible for an enterprising boy to prepare himself for a profitable, honorable, and fascinating lifework.

What college in the world offers more than this? We would not have a boy enter one of these colleges for the fun he expects to find there. He will probably able to find more at other institutions. Our agricultural colleges should be filled with earnest thoughtful boys who are ready to learn and think. There are thousands of the boys we have in mind on our farms to-day who need a broader foundation for their education than they can find in the newspapers or in the family library. Personal contact for four years with men who are investigating the principles of agricultural science will quicken their powers of observation without dulling in the least their interest in practical farm matters.

In short, the *Rural New Yorker* believes that the young man who proposes to become a good farmer will find an agricultural course just as helpful as a course at a law school would be if he intended to become a good lawyer. We also believe, looking at the matter from a purely business standpoint, that the majority of cases, the agricultural course can be made the more profitable. We would therefore say to the young man who has made up his mind to become a farmer and who feels that he has the faith and the courage to work and wait for a sure reward, to make an agricultural college course a part of his lifework. Take our word for it that no one will ever regret having done so.—*Rural New Yorker.*

COLLEGE BUSINESS.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. Applications for extension of time on land contracts should be sent to the Secretary of the Board of Regents, at Manhattan.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Kellerman, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study or work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

Applications for Farmers' Institutes should be addressed, as early in the season as possible, to the President.

The Experiment Station should be addressed through the Director.

KANSAS THRIFT.

The Southwestern Irrigation Company have begun work on their first experimental ditch in Wichita County. Underneath the surface of that part of the State is supposed to be a sheet of water, in places increased by underground streams.

A Sedgwick County farmer shipped two carloads of sweet potatoes last week to St. Paul, Minnesota, where he received \$1.80 per bushel for them. He sold the remainder of his crop here for \$1.00 per bushel. Sweet potatoes never fail in this valley.—*Wichita Republic.*

A five or six foot vein of excellent fire clay was passed through on the Huggans' place at a depth of 65 feet. A barrel of it has been sent to experts to be tested. If it proves to be a superior quality, we may expect to see a pottery established here soon.—*Cheyenne Advance.*

The horse business in Kansas, says the State *Journal*, has become one of the most extensive branches of the animal industry. One buyer from Topeka recently bought and shipped out of Lyon County forty-three car loads of horses. In the County he picked up a carload of mules, for which he paid the farmers an average of \$135 per head.

A Cowley County farmer tells the *Winfield Courier* that he sowed eighty-two acres of winter wheat last fall, on twenty-two acres of which he has kept eighty-five head of hogs and nine cows, and that the wheat on which the stock ran is in better condition than the other. The pasture more than repaid him for the entire amount planted.

Traveling men who have made trips through Illinois, Iowa, Nebraska, and Missouri claim that the appearance of the crops in Kansas far exceeds that of any of the States mentioned. If it does not, these States are to be congratulated on their prospects. There has never been a better stand of corn in the State than at present, and wheat and oats are in prime condition. The fruit crop has never looked better than now, and, all things considered, the Kansas farmer has cause to rejoice.—*Whitewater Tribune.*

The following from the *Independence Tribune* will apply to a great many Kansas Counties: "The equable climate of this thirty-seventh parallel and the rich soil of Montgomery County offer inducements to the gardener and the small-fruit grower possessed by no County in the lands of snow and ice. Not to be overlooked are the facts that we can plough at some period every month in the year; that we do not have any severe weather; that spring comes early, and that we are weeks ahead of Central Illinois. The cherry, plum, strawberry, and raspberry are at home here, and their yields are simply wonderful. Apples and peaches are grown in immense quantities, and many farmers are getting out apple orchards of one and two thousand trees, and one man has out eighty acres in apples, and proposes to keep setting 1,000 trees per year. The markets of Kansas City, Denver, Omaha, St. Louis, and Chicago are easily accessible, and with a refrigerator car, small-fruit growing must become immensely profitable."

EXPENSES.

Tuition is free, and no general fee for incidental or contingent expenses is charged. In a few special departments of instruction, the following payments are made in advance to the Secretary:

In the term of Analytical Chemistry, students pay \$3 for the chemicals and apparatus used in their laboratory practice and analysis.

In the Printing Office, young men, in their first year, pay \$3 a term for office expenses. Advanced students have the use of the office for the work performed during the industrial hours.

In Telegraphy, young men pay \$3 a term for office expenses.

Young women are furnished both Printing and Telegraphy free of expense, these two offices, with the Sewing and Cooking Departments, being provided especially for their industrial training.

Lessons in instrumental music—two a week—are from \$10 to \$15 a term, according to its length; one a week, \$6 to \$8.40. One-half is to be paid to the instructor in charge with the first lesson, the other half at the middle of the term.

The cost of text-books at the book stores is, for the first year, about \$4 a term; for the second year, \$2.75 a term; for the third year, \$7 a term; and for the fourth year, \$5.50 a term.

The expenses for apparatus and tools to each student during the course are as follows: Drawing, \$3.50; microscope for Botany and Entomology, \$1.50; case, pins, etc., for Entomology, \$2.25; rules, in carpentry 25 cents, printing 25 cents. The total expense for these articles during the four years is less than ten dollars.

Board and washing are not furnished by the College. Board, with furnished rooms, can be procured in private families at from \$2.75 to \$4 per week. Some students board themselves at even less cost; and rooms for the purpose can be obtained at a rent of from \$1 to \$3.50 a month. Washing costs from 50c to \$1 a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$100 to \$200 a year.

HOLSTEIN-FRIESIANS AT THE COLLEGE.

The Farm Department has become the fortunate possessor of a trio of Holstein-Friesian cattle adjudged to be as fine specimens of the breed as any to be found in America. They arrived here May 28th, and were selected by President Fairchild and Professor Georgeson from a herd which has long been famous in the West, the herd of Mr. M. E. Moore, of Cameron, Mo.

They were needed here for two reasons: first, to illustrate the qualities and peculiarities of this favorite dairy breed to the many students of the College; and secondly, to enable the Department to fall into line with the rapidly growing dairy interests of the State, and assist in throwing light on the many questions which present themselves to the dairymen for solution. It is intended to do this work without in any way jeopardizing the beef-interest already represented at the College by Polled Angus, Herefords, and a large herd of fine Shorthorns.

The following is a brief description of the new arrivals:—

Sylvia's Chief, 15189, a very promising fourteen-month old bull, bred by Mr. M. E. Moore, heads the list. He is black, with white on shoulders, throat, both sides, belly, and legs; sired by Chief of Maple Hill 1674 H. F., the famous show bull in Mr. Moore's herd; dam Sylvia 1541 D. F., an imported cow with an excellent record, having given 2200 lbs. of milk in a month and 3 1-16 lbs. butter in one day. Sire's dam, Klasina Hengenveld, gave 102 lbs. milk in one day, and 956½ in ten days, and made 97 5-16 lbs. butter in thirty days.

The cows are Empress Josephine 4th 4405 and Kroontje's Beauty 5051. Both of them are sired by Major Pel 2763 H. H. B., an imported bull remarkable for the butter qualities of his get. The former is out of Mr. Moore's show cow Empress Josephine (imported), which has made 25½ lbs. of butter in one week. She is four years old, mostly white, with black head and black patches on neck, shoulder, back, sides, and fore arms, and with all the points of an ideal milker finely developed. She gave 543 lbs. of milk in ten consecutive days with her first calf, and though she has taken first prize at the Kansas State Fair last year for milk giving the greatest per cent of butter fats in a contest of breeds, including Jerseys. Her full sister, Empress Josephine 3rd, has made 31 lbs. 2 oz. of butter in a week from 603 lbs. of milk. She is due to calve in July, and with a view to dry her up before calving, her grain feed has been withdrawn for some time, but it is still necessary to draw from her a couple of gallons of milk daily to keep her udder in proper condition.

Kroontje's Beauty 5051 is three and a half years old. She dropped her second calf in April, and is now giving from 55 to 60 pounds of milk daily. She is of good size, typical shape and color, and shows most excellent milk points, but she has not yet been tested as to her actual capacity. Her dam, Kroontje, is an imported cow, and full sister to Gerben 4th, the most remarkable cow in Mr. Moore's herd. Gerben 4th has made 32 lbs. of butter from 527 lbs. of milk in seven consecutive days.

Altogether, this trio of Holstein-Friesians make a very promising addition to the College herd.

A TEMPERANCE MASS-MEETING.

Immediately following Chapel exercises on Monday morning, President Fairchild read the following petition and call for a mass-meeting:—

"We, the undersigned officers and students of the Kansas State Agricultural College, in view of the decision of the Supreme Court of the United States allowing the sale of intoxicating liquors in our State regardless of the prohibitory law, and having all faith in constitutional prohibition as a preventive of drunkenness with its attendant crimes, wish to give expression of our determination to support, in every manner open to us, our present prohibitory law, and to work until we succeed for a provision of the National Government allowing States to prohibit entirely the sale of intoxicating liquors as a beverage."

"To this end, we desire to meet in mass meeting for ten minutes immediately after chapel Monday morning, June 2nd, to make an expression of our beliefs and wishes to our National Congress, and of sympathy to those who are working for the same end."

Mr. Frank A. Waugh was elected Chairman. The following resolutions, offered by Mr.

Harry B. Gilstrap, were unanimously adopted:—

"WHEREAS, The recent decision of the Supreme Court in regard to the importation of intoxicating liquors has rendered our prohibitory law less effective, and has given encouragement to those who are the enemies of all measures that tend to limit or suppress the liquor traffic.

"Resolved, That we, the officers and students of the Kansas State Agricultural College, express our hearty appreciation of the good wrought by prohibition in Kansas, and declare our intention to support, in every way we can, the present prohibitory law, and work for the adoption of such laws in other States.

"Resolved, That we earnestly petition Congress to take such action as will render effective all existing laws, and that we urge the officers of our own State to a more rigid enforcement of those laws.

"Resolved, That we commend to other States the laws whose efficiency has been proved by trial in Kansas, and that we lend all possible encouragement to those who are striving to promote the interests of temperance.

"Resolved, That a copy of these resolutions be sent to the Kansas Delegation in Congress, and to the colleges and universities in our sister State, Nebraska."

FARM NOTES.

BY PROF. GEORGESON.

There has been a brisk demand for bulls from the College herd of late, four having been sold within the last few weeks at fair prices. The Polled Angus bull, Heir of the Shire, who had outlived his usefulness on the farm, was sold to Mr. H. Weisendanger, of Randolph. The young Shorthorn bulls, Fabius, Dexter, and Jovial, have been sold respectively to Mr. A. Yoxall, of Russell; Mr. C. Rosewurm, of Beman; and Mr. F. C. Sears, of Tescott, Kansas. The only remaining male is a Shorthorn bull calf, six months old, which will be a bargain at \$75. He is a remarkably well-formed, chunky young bull, the picture of his sire, Scottish Chief.

Three varieties of buckwheat were sown April 21st: viz., Japanese, Silver Hull, and common. The rather severe frost of May 7th completely killed the Silver Hull and the common, but only slightly injured the Japanese, which is now in full bloom. The other varieties were resown, and now promise a crop.

The first cutting of alfalfa from two experimental plats took place May 22nd. Only a few spikes showed bloom, but the stems were fast getting hard and woody. The plats are of equal size, one-fourth acre, one of them broadcasted and the other drilled two feet apart, the latter being cultivated while young. There is now scarcely any perceptible difference in the vigor of growth, and the broadcasted yielded 980 pounds of hay, while the drilled plat gave only 620 pounds. This does not argue in favor of row culture for this fodder plant. All the hay is of first quality, and is greedily consumed by both horses and cattle.

The crops on the farm have suffered much from the dry weather during the latter part of April and the first half of May. The wheat is short in the straw, and will give only a fair crop. It is now coloring, and will be ready to harvest soon after Commencement. The oats in like manner are dwarfed, and are heading out too soon. Much of the early planted corn failed to grow, and re-planting has been the order of the day. A fair stand has, however, now been obtained on nearly all the experimental corn plats. The first planting of kohlrabi, mangels, and beets, which were intended for fodder, prove entire failures. A second planting has given a fair stand of kohlrabi, and they give promise of a crop if the remainder of the season should prove favorable, but even the second planting of mangels and beets has not given a satisfactory stand.

In all cases we find that home-grown seed has given us the best stand. This is the case with a wide range of plants, oats, corn, sorghum, soja beans, and wheat particularly.

Three steers are being fed experimentally on sorghum seed, with a view to find out its feeding value. Such enormous quantities of sorghum seed are produced in this State that its economic use is a question of importance. From February 24th to May 5th it was fed in connection with ensilage. The steers all ate the ensilage greedily, but did not seem then to relish the sorghum seed. The gains during that ten weeks were: Pickwick (pure Polled Angus), 46 pounds; Winkle (grade Short-

horn), 101 pounds; and Weller (pure Shorthorn), lost 13 pounds. He refused the seed altogether. On May 5th, the ensilage gave out, and prairie hay was substituted. Now they liked the seed better than the hay, and from that date till June 2nd Pickwick gained 82 pounds, Winkle 102 pounds, and Weller 163 pounds. The seed is ground to a medium fine meal.

LOCAL MATTERS.

Foreman Mason's house is being treated to a coat of paint.

Do not fail to hear the address of Dr. White on "Character," Tuesday evening.

Mrs. Graham spent two days in Topeka this week attending the musical festival.

Secy. and Mrs. Graham entertain Rev. B. J. Radford, who arrived yesterday afternoon.

The merry hum of machinery in Mechanics' Hall after three weeks' silence, testifies to a repaired boiler.

Mrs. Kedzie visited Topeka on Tuesday afternoon in the interests of the Alumni banquet of Wednesday evening next.

The Faculty and Senior Clubs played another game of ball yesterday afternoon, the former winning by a score of 44 to 34.

Mr. S. H. McIlvain, of Sandusky, Iowa, spent several hours on Monday in looking over the College and its work with reference to sending his son.

After three years' absence from the grounds, mocking birds have again taken up their abode with us, making the moonlight nights too melodious for comfort.

The young ladies of the Fourth-year Class acknowledge thanks to Miss Mattie Reed, a former student, for kindly presenting them with a box of beautiful flowers this week.

Mr. W. F. Cotton, of Wabaunsee, whose son and daughter have been students here in the past years, called on Tuesday to look over the College stock with reference to purchase.

Supt. Whaley, of the Manhattan city schools, called on Monday to show his friend, Dr. L. Z. Coman, of Boulder, Colo., the many interesting things to be seen here at this season.

Mr. Fred Haster introduced at the College on Monday Rev. Mr. Tittel, of Alma, who spent several hours in visiting the College buildings and grounds, which he pronounced very beautiful.

Mr. W. W. Mills, of Riley, with his wife, and two sisters from Ohio, inspected the College on Monday last. Mr. and Mrs. Mills have had a son and a daughter at the College in past years.

Mr. and Mrs. W. W. Mills, of Riley, in company with Miss N. J. Mills, of Chillicothe, and Mrs. E. Lowe, of Washington, Ohio, were interested visitors to the several departments on Monday last. Mr. Mills is a farmer who knows a good hog when he sees one, and the College Polands and Berkshires have special attractions for him.

The Mechanical Department has received an inspector's test pump and appliances wherewith the readings of pressure gauges may be corrected. The Department offers to test and furnish a corrected reading free of charge to anyone who will send gauge, express prepaid. They should be sent to the Superintendent of the Department.

During the Military parade on Wednesday afternoon, from 2:45 to 4 p. m., it will be necessary to have all horses and carriages safely hitched in rear of the buildings or entirely removed from the neighborhood of the firing, which will be in front and southeast of the main building. If all the multitude of friends who gather to view the sham battle will bear this in mind, much trouble and danger will be avoided.

The Experiment Station, in all its Departments, makes a full display of stakes, the boundary of multitudinous plats, this year. In all, there are more than 3,600 groups of plants under experiment, of which the Horticultural Department has 1,700, the Farm Department 1,100, the Botanical Department over 600, and the Chemical Department over 200. These 3,600 plats represent more than thirty-six thousand questions in plant growth, plant disease, yield of crop, quality of crop, sugar content, method of culture and treatment—all of interest to tillers of the soil.

THE INDUSTRIALIST.

THE WEATHER FOR MAY.

BY ASSISTANT CHEMIST BREESE.

The mean temperature for the month of May, 1890, was 62.86° , which is 1.9° below the average of the record. There have been twenty-one warmer and eleven cooler Mays, the extremes being 70.42° in 1880, and 58.04° in 1869. The highest temperature for the month was 92° , on the 22nd; the lowest, 30° , on the 7th—a range of 62° . The warmest day was the 29th, the mean temperature for the day being 78.75° ; the coolest days were the 5th and 15th, the mean for each being 47.5° . The greatest range for one day was 48° , on the 14th; the least, 7° , on the 30th. The mean temperature of the observations at 7 A. M. was 56.42° ; at 2 P. M., 73.74° ; at 9 P. M., 60.645° . With the maximum thermometer, the mean for the month was 77.22° ; with the minimum, 49.16° —the mean of these two being 63.19° . The last frost of the season was a very light one on the 16th; a heavy frost on the morning of the 7th cut down young corn, potatoes, tomatoes, and vegetables of most kinds. A cold wave came from the north on the 12th at 10:30 A. M., accompanied by a high wind. The temperature fell rapidly from 82° , at about 9 A. M., to 56° , at about 1 P. M.

The precipitation was 1.806 inches, while the average rainfall for May is 3.93 inches. The highest recorded rainfall for May is 9.42 inches in 1859; the lowest, .91 inch, in 1870. There was hail on the 17th and 20th, but the stones were small, and fell but a short time, no damage being done. There were three thunder storms, on the following dates: the 8th, 17th, and 30th. The rains have been quite well distributed, but the meagre amounts that have fallen do not suffice. Pastures are not doing well, wheat is firing, oats are stunted, and the outlook for corn is not favorable; a poor stand, and scanty rainfall on that, is the present status of the crop here. The cool cloudy weather that prevailed a great deal of the time during this month counteracted the effects of the dry weather to some extent.

The mean barometer for the month was 28.793 inches: at 7 A. M., 28.826 inches; at 2 P. M., 28.769 inches; at 9 P. M., 28.785 inches. Maximum, 29.137 inches, at 7 A. M. on the 7th; minimum, 28.356 inches, at 2 P. M. on the 9th; monthly range, .778 inches.

There were four cloudless days: the 7th, 11th, 14th, and 16th; and three entirely cloudy ones: the 20th, 30th, and 31st. Fifteen were at least two-thirds cloudy, and sixteen less than two-thirds cloudy.

The wind was from the northwest sixteen times; southwest, sixteen times; north, fourteen times; southeast, thirteen times; east twelve times; northeast, seven times; west, five times; south, four times, and a calm six times at the hour of observation. The total run of wind for the first twenty-seven days of the month was 5,332 miles. This gives a mean daily velocity of 197.5 miles, and a mean hourly velocity of 8.23 miles. The highest daily velocity was 547 miles, on the 9th; the lowest, 57 miles on the 26th. The highest hourly velocity was 44 miles on the 9th, between midnight and 1 A. M.

The table below gives a comparison with the preceding Mays:—

May.	Number of Rains.	Rain in Inches.	Mean Temperature.	Maximum Temperature.	Minimum Temperature.	Mean Barometer.	Maximum Barometer.	Minimum Barometer.
1858	5	5.12	61.10	88	42			
1859	12	9.42	65.61	88	42			
1860	3	1.13	69.00	97	30			
1861	8	3.76	64.93	90	42			
1862	8	3.18	66.12	89	40			
1863	4	3.13	66.39	91	48			
1864	6	2.29	64.79	89	31			
1865	6	2.04	68.20	90	32			
1866	8	2.83	61.87	90	45			
1867	11	3.59	59.18	93	41			
1868	4	1.38	67.06	88	51			
1869	9	1.12	58.04	88	43	28.72	29.05	28.30
1870	.91	67.60						
1871	8	5.07	67.21	88	45			
1872	15	6.81	65.78	90	34			
1873	13	8.54	62.84	86	44			
1874	7	2.08	67.55	93	40	28.80	29.01	28.11
1875	10	2.46	64.16	93	29	28.70	29.04	28.10
1876	7	5.73	65.15	86	34	28.60	29.02	28.30
1877	13	5.20	64.16	83	31	28.66	28.90	28.24
1878	11	4.04	61.76	85	33	28.63	29.04	28.24
1879	7	1.79	68.57	93	43	28.58	28.85	28.18
1880	6	3.74	70.42	94	44	28.65	28.79	28.28
1881	14	6.67	68.20	87	46	28.58	28.84	28.22
1882	8	5.43	58.36	86	37	28.59	28.88	28.10
1883	11	4.83	59.99	88	37	28.56	28.04	28.06
1884	5	4.03	60.95	85	35	28.65	28.88	28.31
1885	8	4.30	60.73	86	35	28.67	28.03	28.35
1886	9	4.87	69.54	96	51	28.88	29.20	28.38
1887	7	2.54	69.09	95	37	28.87	29.20	28.19
1888	7	2.25	66.16	88	30	28.88	29.19	28.47
1889	7	6.15	63.11	94	30	29.01	29.32	28.53
1890	10	1.81	62.86	92	30	28.79	29.14	28.36
Sums	262	129.74	2,136.98	2786	1192	516.91	522.22	508.72
Means	8.5	3.93	64.76	90	35	28.72	29.01	28.26

GRADUATES AND FORMER STUDENTS.

H. W. Jones, '88, is to report the Commencement exercises for the *Mercury*.

M. E. Krotzer, student in 1881-2, is to graduate at Park College, Parkville, Missouri, next week.

J. B. Brown, '87, came up from Fredonia last week to take the place of W. H. Olin, '89, in the Experiment Station while Mr. Olin is engaged as Instructor at the Wabaunsee County Normal Institute.

Emma A. Allen, '89, visited the College Tuesday. She has been in poor health since completing her winter's teaching, but hopes to be strong for a year of post-graduate study at the opening of the next College year.

S. S. Cobb, '89, is one of the early arrivals for commencement. His year in the printing office at Muskogee, I. T., has passed quickly and pleasantly, and he will in a few weeks open a drug store at Waggoner, Indian Territory.

COLLEGE LIVE-STOCK FOR SALE.

We call the attention of our readers to the fact that the Board of Regents of the College have authorized the sale of a number of Shorthorns and Jerseys from the College herd, which is deemed too large for the means of maintenance and the needs of the institution, numbering as it does upwards of 50 head. Among the Shorthorns offered for sale are thirteen cows and heifers, all fine specimens of the breed that will prove valuable acquisitions to any herd. Here is a chance of getting some good foundation stock which breeders and admirers of good Shorthorns should not fail to improve. They will be sold at reasonable prices considering their breeding and individual merit. The cows have all been bred to Scottish Chief, 89317, one of the finest Cruickshank bulls in the State, and the heifers offered are of his get. Several of the young cows are by the fine imported Cruickshank bull Thistle-top, 83876, now in Colonel Harris's herd, Linwood, Kansas.

Among the Jerseys are several young cows, now getting into the prime of life, all of Herd-Book stock, which will be sold for \$75.00 each.

Persons who contemplate buying are cordially invited to visit the College and inspect the herd, and correspondence on the subject is solicited by the Professor of Agriculture, who will furnish all desired information in regard to prices and pedigrees.

KINDRED INSTITUTIONS.

The Georgia Station boasts of a post office of its own which bears the suggestive name "Experiment." Bulletin No. 7 of this Station shows analyses of food-stuffs, meteorological facts, and experiments with the destructive leaf-hopper.

The Ontario Department of Agriculture issues from Guelph, Bulletins Nos. 45 "Ontario Oats," 42 "Fodder Corn and the Silo," 48 "Butter Making," and from Toronto Bulletins Nos. 32 "Crops and Live Stock in Ontario," 26 "Statistics of Crops in Ontario."

Bulletin No. 9 of the Iowa Station shows "Comparative Value of Fodder Plants," "Iowa Station Milk Test—A Correction," "The Relative Value Plan at Creameries," "The Plum Curculio and the Plum Gouger."

No. 1 of Vol. 13 of the Journal of the Cincinnati Society of Natural History contains, among other things, the description of a new species of *Crenoid* bearing the name *Uloarinus Kansensis* N. Sp. of which a plate is shown.

The Report of the Experimental Farms of Canada for 1889, contains 152 pages of well-printed and well-arranged matter showing results for the year.

Vol. 3, No. 3, Second Series of the Ohio Station, is a bulky bulletin showing further results of experiments with corn, experiments with oats, and an article upon Actinomycosis, or "Big Jaw," in cattle.

The May report of the Statistician of the Department of Agriculture shows the condition of winter grains, the progress in cotton planting, wages of farm laborers, and freight rates of transportation companies.

"Preservative Fluids for Fresh Fruits" is the title of Bulletin No. 86, of the California Station.

The May bulletin of the Massachusetts Station is devoted to results of analyses of commercial fertilizers and a statement of trade values of fertilizing ingredients in raw materials and chemicals.

The Second Annual Report of the Storrs School Agricultural Experiment Station located at Storrs, Conn., contains, besides the usual reports of officers, papers upon "The Acquisition of Atmospheric Nitrogen by Plants," "Bacteria in Milk, Cream, and Butter;" "Stubble and Roots as Manure;" "Effects of Different Fertilizers upon the Composition."

A special bulletin issued by the Department of Agriculture contains the proceedings of the Inter-State Convention of Cattlemen held at Fort Worth, Texas, on March 11th, 12th, and 13th last.

INDUSTRIAL TRAINING.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have Farming, Gardening and Fruit-growing, Carpentry, Cabinet-making, Iron-work, Printing, or Telegraphy. Young women may take Sewing, Printing, Telegraphy, Floriculture, or Music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second year and the fall term of the third year, upon the farm, gardens, and orchards. Young women take their industrials for one term of the first year in sewing, and for the winter and spring terms of the second year in the teacher's laboratory and dairy.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

EDUCATIONAL MEETINGS.

Washburn College Commencement, June 6th to 18th. Kansas Chautauqua Assembly, Topeka, June 24th to July 4th. Agricultural College Commencement, June 7th to 11th. Ottawa Chautauqua Assembly, June 17th to 27th. State Normal School Commencement, June 9th to 12th.

Prof. W. A. Quayle was this week elected President of Baker University. He is not thirty years old as yet, but a man of unusual ability, a good speaker, and a vigorous organizer. Baker did well in this selection.

The Turn Verein of Atchison has offered the services of their professional teacher in gymnastic training to the County Institute free of charge, which offer was accepted by the County Superintendent and the School Board of the city.

Architect Davis, who is Superintendent of the new Methodist University of Topeka, has advertised for proposals for the excavation and erection of the foundation for the University; size of building about 80 by 275 feet. It is expected to expend about \$250,000 in buildings within the next three years.

Thanks for an invitation to attend the Commencement Exercises of the State University. They will be held from June 5th to June 12th inclusive, and promise to be of unusual interest to visitors and friends of education. The graduating class numbers 63, of which the Academic Department furnishes 27, the Law Department 29, and the Pharmacy Department 7.

News comes from Lawrence that Prof. L. I. Blake, Professor of Astronomy and Physics of the State University, has been offered the same chair at Amherst at nearly double the salary he is now receiving. He has not yet decided to accept the offer. Prof. Blake has made many improvements in his department at the University, and his loss would be greatly felt. He is a specialist in electrical engineering.

The Dickinson County High School will close its first year's work June 6th. The institution is a grand success. At first it was thought to be an experiment, but now, we are glad to say, it is what every County in every State of this country, having a suitable population and taxable property sufficient, ought to make a strong effort to secure. No funds paid as a tax would afford as much benefit to the masses throughout our whole country as such a tax would do.—*Junction City Union*.

We are in receipt of a number of circular letters from different railroad companies advertising their particular routes to the National Educational Association at St. Paul, in July, as "the most direct, most picturesque, best, most profitable," etc. It seems that even the Committee on Transportation elected by State Teachers' Association could not fully agree as to an official route, for while there is a majority report signed by Chairman H. G. Larimer, of Topeka, "that the Kansas City, St. Joseph & Council Bluffs, Sioux City & Pacific, and Chicago, St. Paul, Minneapolis & Omaha roads, be designated as the official route of the State of Kansas from Kansas City, Mo., and Missouri River points," there is also a minority report, signed by Z. R. Ashbaugh, of Topeka, which recommends the Rock Island Route, and gives seven good and solid reasons why this route is preferable. This means, we suppose, that everybody can do as he pleases in the matter.

MANHATTAN ADVERTISEMENTS.

R. ALLINGHAM, dealer in Fresh and Salt Meats. Special attention to student trade. Goods delivered free.

F. FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

E. B. PURCELL, Corner of Poyntz Avenue and Second Street, has the largest stock in Manhattan, of everything

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A. C. McCREARY, Janitor.
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GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to members gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

COMMENCEMENT EXERCISES.

The phrase, "the largest class in the history of the institution," will apply this year as well as last, and if present indications count for aught, will be made to do duty again twelve months hence in the report of Commencement exercises. This year there is a gain of two in the number of graduates, there being twenty-seven in the Class of 1890. Their names and addresses, and the subjects of their orations, are here given:—

Samuel I. Borton, Hill Top, Kan., "The Destiny of Our Cities."

Frank A. Campbell, Wall Street, Kan., "The Farmer's Boy and his Future."

Arthur F. Cranston, Parsons, Kan., "The Times."

John Davis, Douglass, Kan., "A Great Transition."

Grant W. Dewey, Mound City, Kan., "Sympathy and Sociality."

Charles J. Dobbs, Middlesboro, England, "Thoughts on Philanthropy."

Charles W. Earle, Manhattan, Kan., "The Power of Example."

Schuyler C. Harner, Leonardville, Kan., "The True Statesman."

Jonn W. Ijams, Ozawkie, Kan., "The Influence of Prejudice."

Bertha S. Kimball, Manhattan, Kan., "Work of the Specialist."

Harriet E. Knipe, Manhattan, Kan., "Concord and Discord."

Nellie P. Little, Manhattan, Kan., "Character Building."

Ellsworth T. Martin, Wea, Kan., "Science in Citizenship."

Silas C. Mason, Manhattan, Kan., "Kansas Farmers and Kansas Forests."

Wilton L. Morse, Mound City, Kan., "The American Scholar."

Albert E. Newman, Kingman, Kan., "The American Tendency in Scheming."

Julia R. Pearce, Springdale, Ark., "Our Miners."

Emil C. Pfuetze, Manhattan, Kan., "A Defense of Napoleon I."

William H. Sanders, Broughton, Kan., "Opportunities of Life."

Emma Secret, Randolph, Kan., "Without Hasting, Without Resting."

Marie B. Senn, Enterprise, Kan., "Our Latent Power."

Ralph Snyder, Oskaloosa, Kan., "Capitalists a Necessity."

George E. Stoker, North Topeka, Kan., "Individuality Essential to Community."

Walter T. Swingle, Manhattan, Kan., "Necessity of Truth Seeking."

Gilbert J. VanZile, Carthage, Illinois, "Commerce and Progress."

Harry N. Whitford, Manhattan, Kan., "The Dignity of Labor."

Thomas E. Wimer, Wayne, Kan., "Our Civilization."

ADDRESS BEFORE THE SOCIETIES.

For the first time, the address before the Literary Societies was included in the programme of Commencement week. This lecture was delivered on Saturday evening last by Mr. B. J. Radford, of Eureka, Ill., on the subject, "The Aim and End of Culture." The demands made upon the limited space of the INDUSTRIALIST forbid more than the merest sketch of the address, the delivery of which occupied an hour and a half. The following is condensed from the report of the Manhattan *Republic*:—

"The definition of culture is the drawing out of all the latent faculties and powers in man. It is something vastly different from mere knowledge-getting. The first purpose of culture is to enable us to see differences between things and ideas. Nice discriminating powers are evidence of high culture. The inability to see any variation in things morally right and wrong indicate an uncultivated nature. The boy who plays marbles for keeps, and the professional man who sees no harm in his tricks of trade, lack culture."

"The next stage of development is seen in the discovery of likeness and contrast as manifested in the arts, music, painting, and poetry. This stage of its progress the world has passed, and we have come to consider another important phase of hu-

man development, viz., the great idea of causation. No longer are men content to look upon the world of order and beauty, but they are asking for the cause of this universal frame. From the lowest to the highest forms of life we seek an adequate cause for each. The first sentence of the Bible answers the question by saying, 'In the beginning God created the heavens and the earth.' The whole of the Old Testament is along the line of cause and effect relations.

"But we must come in our culture to the further idea of design. Not only must we ask 'whence?' and 'how?' but 'why?' What is all this lavish display of handiwork intended for? The weaver sits at his loom with warp and woof constructing the tapestries of beauty that are not to hang on the dingy factory walls, but to adorn the King's house. The warp of law reaching yonder into eternity is being filled in time with the woof of human thought and hope and experience, and God's providence is weaving it all into exquisite patterns of righteousness; e'en though there be threads of sorrow and hate, they but contrast and heighten the beauty of the golden strands of love. And when this exquisite fabric of life is finished and cut away from the thrums, what is it for? To hang on the factory walls of Time? Not so. It will adorn our King's house somewhere."

CLASS DAY EXERCISES.

The fortunate three hundred persons who, as invited guests, assembled in Society Hall on Monday afternoon to assist in the celebration of class day were very pleasantly entertained for an hour and a half in the rendition of the following

PROGRAMME.

Quartette, "Beacon Light,"	Rogers
Devotion.	
Salutatory,	The Significance of Our Discipline
G. J. VanZile.	
Class History	Marie B. Senn
Speech	Social Change
A. F. Cranston.	
Solo and Chorus, "I am King,"	Thompson
Solo, W. H. Sanders.	
Class Poem,	Bertha S. Kimball
Address,	The Present and Its Work
E. T. Martin.	
Class Statistics,	T. E. Wimer
Solo, "The Longest Way Round,"	Roeckel
Marie B. Senn.	
Class Oration,	Work of the Statesman
G. E. Stoker.	
Class Prophecy,	F. A. Campbell
Valedictory,	Ema Secret
Chorus, "Class of '90 O!"	Wimer
Class Musician, W. H. Sanders.	

Space, as well as the uniform excellence of the programme, forbids specification; but the guests, as they look at the beautiful souvenir programmes in years to come, will recall with pleasure the farewell exercises of the class of 1890.

THE UNDERGRADUATES' EXHIBITION.

On Monday evening, the eight members of the Third-year Class whose names appear in the programme below, and who, as explained by their instructor in rhetoricals, Prof. White, were chosen because of their high standing in classes, entertained their friends with orations, dealing with timely topics which won for them many favorable comments:—

PROGRAMME.

Overture, College Orchestra.	
Prayer.	
Chorus, "Bridal Chorus" (from <i>Lohengrin</i>).—Wagner.	
A Plea for the Jury,	A. E. Martin
The Hero of Everyday Life,	Nellie McDonald
Piano Soli, "Carnival de Venice"—Schubert.	D. C. McDowell
The Growth of Toleration,	
The Mission of Socrates,	Lillian A. St. John
Duet, "The Land of the Swallows."—Masini.	
The Evils of Partisanship,	Ben Skinner
The Influence of Agriculture on Literature,	Fanny E. Waugh
Vocal Solo, "A Bird from o'er the Sea."—White.	
The Crisis in the Fortunes of the French Republic,	F. A. Waugh
The Followers of the Red Flag,	Geo. W. Wildin
Semi-Chorus, "Come and Join the Merry Dance."—Turney.	

Music furnished by the College Orchestra and members of the Instrumental and Vocal Classes, under the direction of Prof. Brown.

THE BACCALAUREATE SERMON.

President Fairchild's baccalaureate sermon on Sunday afternoon called out a large audience, notwithstanding the threatening weather, who, with the class, to whom the words of wise counsel were of course directed, gave the speaker their undivided attention. Since the sermon will be published in full next week, a synopsis thereof does not seem necessary here.

THE ANNUAL ADDRESS.

The Annual Address on Tuesday evening by Dr. E. E. White, of Cincinnati, O., whose repute as a lecturer upon educational questions is as wide as the nation, was an admirable presentation of the nature and importance of character. In clear, forcible, and vivacious language, the speaker portrayed the process of character building to which every act of life contributes; showed how every feature, every sense, every action of the body serves to publish to our fellow-men the soul within; and urged the essential need of self training by the voluntary choice of true ideals of life in all its relations. The audience listened attentively an hour and a half in spite of extreme heat, and seemed willing to stay longer. No brief abstract can even suggest the accuracy with which our human nature was analyzed, and we hope to present at some future date a full outline of the discourse.

GRADUATING EXERCISES.

Brief abstracts of the graduating pieces are given without note or comment beyond the general statement that all appeared well composed upon the platform, and did honor to their training during the year under Prof. Olin:—

THE DESTINY OF OUR CITIES.

When the curtain rises on antiquity, we see in all their beauty, Memphis, Babylon, and Thebes, the earliest cities of the world, and once the capitals of extensive empires which have long been classed with the ruins of past ages. What caused woe and desolation to befall these cities? Any thoughtful student of history will answer, iniquity. How long can our cities wage war against such a fearful doom? The shining lance used by the athletes of Rome as they surged to and fro over the bloody, sanded floor of the arena, has, in this country, been moulded into a sickle, or the mighty pen of thought firmly grasped by the hand of honesty. In this, "the land of the free and the home of the brave," the rolling prairie and green valleys are dotted over with hundreds of cities rivaling in population, glory, wealth, and power the "city of the seven hills." At no very distant day iniquity will be swept away by Christian religion. Then we shall enter upon an era having no parallel recorded in the history of nations, and we shall weed from our American cities, drunkenness, licentiousness, and corruption by the shining blades of industry, intelligence, and morality.—*Samuel J. Borton.*

THE FARMER'S BOY AND HIS FUTURE.

What shall we do to keep our boys on the farm? is a problem over which fathers and mothers have lost many nights of sleep. But as the world grows better day by day, the attraction of the farm and of farm life, with all its growing grandeur and beauty, is keeping pace with all other industries of its kind. The complaints against the boy who would not stay on the farm are not so common as they used to be. There are attractions at home for the inquisitive mind. The locomotive may now be studied in the engine that comes every year to the farm to run the thresher; the revolving wheels and peculiar mechanism, once so attractive in the foundry and factory, may now be seen in the field, as the modern self-binder naps the grain, as the planter puts the corn into the ground. The novelty of farming is now as great as that of any other occupation, and the farmer's boy no longer has to go to town to see something new. Character, too, may be developed on the farm as in no other place on the earth, and the farmer's boy is beginning to find it out.—*Frank A. Campbell.*

THE TIMES.

Discontent is almost universal. Agriculture is in distress. Business is settling to its normal basis. We are nearing a revolution in finance. Will the result bring more or less of tariff and silver coinage, of credit and capital? This is an age of money and speculation. The struggle is not so much between the rich and the poor as it is between classes varying in degrees of commercial activity. Does not the remedy lie in the way of practical education, rather than in restraining the

spirit and energy which has by many inventions given capital so much advantage, and raised this Republic to its present proud eminence? We do not want a higher education, but one that will extend itself through the masses. Upon the mass of the people depends the restoration of political and social virtue, just as it depends upon them to restore the credit of a bankrupt treasury. Bring within the circumference of the popular mind the relations which production, consumption, the arts, sciences, and morals sustain each to the rest; then social evils can be intelligently considered by voters too proud to sell their honest convictions for gold and silver.—*A. F. Cranston.*

A GREAT TRANSITION.

Every page of history is but a representation of human nature, and as such is deserving of our curiosity and examination. It is for this reason that I call your attention to a time that would otherwise be destitute of all interest. It was then that most people thought the end of the world had come. Learning had almost disappeared. But this was not to be the destiny of mankind. Already the twilight of modern times was dawning in new institutions and new nations. The evils of the Feudal system faded away as the dewdrop beneath the noonday sun. The spirit of renewed life was stirring the hearts of nations. The darkest period in the world's history is but a transition from an old condition of things to a new. Viewed in this light we can see more in the "Dark Ages" than a mere break in the progress of the world—more than a missing link in the chain of human events. We see a grand and universal school in which men are taught the essential principles of success, the proper use of their power, the mastery of their surroundings.—*John Davis.*

SYMPATHY AND SOCIALITY.

When the fathers of this republic separated themselves from their mother country and formed a nation of their own, they laid a new and true foundation of government. Their first act was to overthrow the power and dignity of the nobility and to establish the true basis humanity and the rights of men. This philanthropy has been growing until now there is more human kindness, more real human sympathy, a greater desire to help one's fellows in the United States than in all the world besides. Society and civilization are the common inheritance of our race. Education has made unrivalled progress since the establishment of this Government, and has played no small part in the cultivation of sympathy and fellow feeling. Sympathy is the silken tie that binds heart to heart, and mind to mind in body and in soul; it will outlive the stars that now seem fixed forever; it is a constant and stimulating force, and has made possible greater sociality, public and domestic. We regard as best the man who has the most feeling, the deepest sympathy, the warmest heart.—*Grant W. Dewey.*

THOUGHTS ON PHILANTHROPY.

As we become educated we find that the only true and noble aim in life is to make this world better than it now is. In civilization, the natural law of the survival of the fittest, or strongest, is modified by human sympathy. The spirit of the times tends toward philanthropy. It is the noblest sentiment of the age in which we live. The old system of charity contained mistakes that are now being remedied. Andrew Carnegie, an American millionaire, suggests as the best use of large fortunes for philanthropic effort, anything that would be of a public and permanent good. The idea is that it is best and right to help only those who are willing to help themselves. He eliminates from his consideration those unfortunates in the world, as described by him, so "inert, lazy, and hopelessly poor" as not to be worth saving. Now it is among this class of people that philanthropy can do its noblest work. It is these who are in the greatest need of help. They, also, can be taught to help themselves. Here is an open field for labor, an opportunity for doing good. What higher, nobler aim can there be in life than to live for humanity, to work for the elevation and improvement of our fellow men?—*Charles J. Dobbs.*

THE POWER OF EXAMPLE.

The noblest and most exhilarating objects of human contemplation are those which exhibit human nature in its exalted aspects. History notes examples of men so filled with wine of life, as to exalt and intensify manhood and demonstrate its inner grandeur and power. When national life begins to quicken, our dead heroes rise in the memories of men, and appear to stand by in sol-

emn approval. Read their history and you will find them a succession of variously gifted men who have contributed by their life and example to shape the character of our country. Washington, one of the grandest treasures of his country, Lincoln, by force of his example during the civil war, are models for the upbuilding of ideal human excellence. The golden words that good men have uttered, the examples they have set, live through all time. Nothing can be compared with the memory of a well spent life; and great alone is he who has earned the glorious privilege of bequeathing such a lesson and such an example to his successors.—*Charles W. Earle.*

THE TRUE STATESMAN.

The civilized world has always been ready to recognize plenty of men as statesmen. In the past, many of these have served well their country in the faithful execution of its laws, and by using their best efforts for the public welfare. But what do we mean by a statesman in the true sense, and what are his requisite qualifications? Many of our public men lack skill, steadiness, and persistent harmony, and it is these three characteristics that give quality and dignity to statesmanship. That statesmen have not been lacking in our own country is plainly shown by Franklin, Jefferson, Webster, and Clay. These men were broad, philanthropic, and spent their whole lives for the good of the people in the way of truth. But statesmanship is not gained in a day. A foundation must be laid in early life. The formation of character and habits which are correct are the best things to be considered, and this is brought about by training. Much of this training may be obtained at schools that teach morals, character, and true manhood as well as mere intellectual work. The wants of the community must be cared for, and the statesmen by their wise ruling must keep up communication with all foreign powers.—*Schuyler C. Harner.*

THE INFLUENCE OF PREJUDICE.

Among the many influences that determine one's course in life no one has more power than prejudice. It causes persons and parties to cling to false principles, and to reject beneficial reforms. Science has been discouraged in proposing new laws and principles by a world of prejudiced minds. Witness the opposition to the work of Copernicus, and Galileo, the laying of the Atlantic cable, and the invention of the phonograph. Our most noted authors are not appreciated until after they are gone. In our daily affairs prejudice holds sway. Many will leave a skillful physician for the nostrums of a quack. Rather than procure some new invention we labor on with inferior results. Prejudice narrows our view; it makes biased readers and thinkers, false friends, and jealous citizens. To overcome its effects, training must commence in youth, false notions and fancies must be abandoned, and when judging we must place ourselves in the situation of others, view questions impartially and give fair decisions. When prejudice is overcome, disturbances, political and social, will cease, superstition will disappear, and then we can look for a more rapid advancement in education, more civilization, and more harmony between nations.—*John W. Ijams.*

WORK OF THE SPECIALIST.

Well may the historian linger over the page on which he inscribes the history of the sixteenth century, for it is a century that marks an era in the history of the world. It is a century that marks the influence of a class of brave and noble men, for the work of the specialist has revolutionized and civilized the world. Blot his name from the universe, and we step backward to the midnight of the Dark Ages; science, art, education are but empty names, and the grandeur of our nation is gone. Who can say that the specialist is a narrow minded man, when, if he studies the life of but one plant or one animal, a whole world with its life and death and its struggle for existence opens before him? Is there not magic in the hand that has revealed through the microscope the beauty and mystery of an unknown world? The army of specialists is unnumbered, yet we know the value of every one, and while we honor our Huxley, our Darwin, and our Agassiz we forget not the thousands of workers who will ever be unknown to fame. The world has grown broader and better through their efforts, and their work shall exist as a monument long after the dust of the Egyptian pyramids shall be scattered to the four winds, and the great sphinx no longer stands and is no longer needed to read the riddle of life.—*Bertha S. Kimball.*

CONCORD AND DISCORD.

In our common life are to be found various degrees of concord and discord. We define concord as harmony, and discord as want of harmony. At the time when the earth's "corner stone" was laid, little of discord was known, but all was complete harmony. The whole world was at that time an unbroken harmony—as a vast piece of music spread out before us. In nature, we see marked examples of concord. If we speak of them it is because we personify them and clothe them with human qualities. Again, we find harmony in the musical instruments before us. The world is as one great orchestra, which, at the beginning, was in complete harmony. But one day a chord was broken, and a discord long and harsh grated upon the universe. All the reformers of the world are working to hush its sounds. In our modern orchestras all the instruments are tuned to the sound of one. There is going to be a grand tuning of instruments, and when done, we are going to sing without a discord. Then, at the laying of the top stone of the world's history the same voices shall be heard as when the "morning stars sang together, and the sons of God shouted for joy."—*Harriet E. Knipe.*

CHARACTER BUILDING.

All character is developed from a succession of daily habits and accidents, the quality depending upon the proper or improper use of them. It has been said that if we take care not to form bad habits, the good ones will take care of themselves. But it would be better to concentrate one's thoughts on the good habits, and by doing so draw the attention from the bad ones. Certainly there are some habits, as application, intelligent observation, and perseverance, which require our special attention. Perhaps none are more important than the power of application. Without it, we are practically worthless. Thoroughness is another of the materials to which we must give our attention, and we might say it is essential to success. Who has not realized that early contracted habits are the hardest to overcome, and are often never corrected? A mistake in the foundation of our character affects our whole lives. How much care, then, we ought to take during its formation!—*Nellie P. Little.*

SCIENCE IN CITIZENSHIP.

Of the principles that have ruined empires and wrecked kingdoms in the past, none have been more prominent than that which declares men to be political equals. The progress from century to century has been such as to make the subject the citizen. Increased responsibility comes with increased power, and the demand for individual worth is very great. Our civilization is taking an unbalanced form. Government seems inadequate to meet the demands upon it. The remedy lies in a higher standard of citizenship gained by broader culture. Science applied to nature has in various ways produced wealth. It is the office of government to secure a wise distribution, and this today is the source of agitation. As we pass through successive days and nights of prosperity and adversity, the welfare of the nation depends upon the wisdom of the many. The aim of education is to supply this wisdom. We need not facts so much as principles, and principles are science. It is this science applied to public affairs through the medium of our citizens that will solve the equation of success.—*Ellsworth T. Martin.*

THE AMERICAN SCHOLAR.

Before America was discovered the deference paid to the scholar was very marked. Upon him were conferred the highest honors, or he was persecuted unto death according as he was in favor or disfavor with his king. The individual freedom given by our Constitution was not conducive to this European scholarship. The questions at issue here were those of bodily wants, of material improvement and development. As the practical man is indispensable to the maintenance of our material condition, so if we are to attain a higher development physically we must have nobler minds for example and inspiration. The truly American scholar will be a truly practical man whose higher education does not unfit him to live and toil with his fellows, but makes him a power for good among them; who sees farther than material and community interests. His place is not merely in literature, art, and science, but his help is needed in the shop and on the farm.—*Wilton L. Morse.*

AMERICAN TENDENCY FOR SCHEMING.

There is probably no other existing evil among us so great as the universal tendency of our

people to gain wealth by scientific gambling. While education gives man greater knowledge, it also tends to give the power of genteel trickery greater scope. It is an erroneous idea that capitalists have a greater tendency for scheming than others of the same intellectual capacity. Legislatures as well as other officials are not always elected for their purity and statesmanship, but for their ability to scheme with their fellow men. With such leaders it is no wonder that we have direct violators of law. Who is it that can prophecy the time when the misty veil between us and absolute righteousness shall be removed and our metropolitan papers shall have ceased to record desperate strikes, bloated combines, or "legal robberies?" This can not be expected until every man is impressed with the fact that his honor as a gentleman rests with himself, and that he is in duty bound to obey the moral laws of the universe, and not only to respect the written laws of our land, but to revolutionize the moral feelings, and place them in a chosen union with the sacred rights of mankind.—*Albert E. Newman.*

OUR MINERS.

Farming and mining are the oldest occupations in the history of man. The miner is seldom heard of; he is at the foot of the social ladder, while in days past he was an important social factor. He toils in the caverns of the earth for those who seldom think they are dependent on his labor. Though in dirt and darkness he is fit oftentimes to greet those who spurn his greeting. Farmers and miners represent the greatest industries in the world. They are the pioneers of civilization. As they toil on, a part and parcel of our civilization, all thoughtful persons will unite in a hearty "God bless the miner."—*Julia R. Pearce.*

A DEFENSE OF NAPOLEON I.

Exhausted of her treasure, her industry paralyzed, the nation bankrupt, France emerged from the revolution of 1789 and proclaimed herself a republic. Yet, almost before she had taken her first stride toward democracy, the whole of Europe banded together to crush her. Here there came before the world Napoleon, who proved to France at once a deliverer and a leader, and the country was again made the first nation in the world. England foresaw the day when France would rival her, even upon the sea, and the British parliament began a series of intrigues for the humbling of Napoleon, never resting until he lay dead upon his couch at St. Helena. Napoleon instituted reforms, the results of which rule Europe today. His stupendous public works and improvements attest his foresight and wisdom; and the French are today the first in industry and wealth upon the European continent. Napoleon was neither a tyrant, a despot, nor a murderer as claimed by his enemies, but his battles were, for the most part, fought in defense of France, and the others with the hope of gaining a lasting peace.—*Emil C. Pfuetze.*

OPPORTUNITIES OF LIFE.

This thing we call life may be likened to a kaleidoscope whose pattern ever changes as different people take it. All too soon are those shifting scenes of life hurried before us, and we but become acquainted with each when it passes us forever. I wish we could see what so directly or indirectly makes up the sum of human happiness—those circumstances which so surely direct our every thought and action. How many there are who think there is but one thing to accomplish, and all is done! We have the oracle legacy of the world's past experience. By its light we can hope to lift the veil of the future, and see the ever broadening path of man, until at last we reach the fullness of that dream of all ages, the universal brotherhood of man. Then when we pause in the sunset of life and look back over our past, we can see in the successful accomplishment of the opportunities life brought us, how we are the stepping stones by which our successors can attain higher culture. Then, and then only, can we say with the poet,

"Through the ages
One increasing purpose runs,
And the thoughts of men are widened
With the process of the suns."

—*William H. Sanders.*

WITHOUT HASTING, WITHOUT RESTING.

Life seems to be divided between excited passions and indifference. The age of studious learning has gone by. The zealot arouses all the activities of mind and body to their strongest efforts in pursuance of the object sought. Like poetry, work requires a tranquil mind. Our ability is limited by nature, and our desires unlimited, except by ourselves. It is to men of untiring, yet tranquil,

deliberate activity that we owe the progress and advancement of the race, from the past to the present. Matthew Arnold, standing at the prow of the steamer, and looking out upon the slow heaving of the boundless ocean, and up to the silent burning of the stars, feels his mind filled with the eternal majesty of the one, and the shining tranquility of the other. Bounded by themselves, they care not in what state God's other works may be, but into their own tasks pour all their powers. His great heart goes out in passionate inquiry to the sea and the stars; how can he be as they, so self-poised, so boundless, so serene? till the answer comes down through the whispering night—to you and to me, "Wouldst thou be as these are? Live as they."—*Emma Secrest.*

OUR LATENT POWER.

Who, not knowing, would ever surmise that the power stored within a tiny seed should, when the proper time came, burst its walls and develop into a force of almost marvelous value? This hidden power manifests itself not only in the growth of the germ, but in a greater, more decisive manner, influencing and determining individual character, and thus the annals of history through the agency of man. Education builds up the wonderful castle, character; yet greater than all is that basis which science itself cannot explain—man's latent power, his inner nature. When the stern facts and realities of life begin in the midst of trials which beset all, then comes the call for one's latent power, strength to resist evil, to choose the true, ever ready to express in outward act the good, the splendor implanted within. It is the supremacy of this sovereign power that prompts all the nobler actions, urges that life which is brightest, purest, holiest, thus creating from the heaven within a glorious life without, with hope to peer into a future brighter than the dreamy present, and faith to look upward in times of gladness and gloom.—*Marie B. Senn.*

CAPITALISTS A NECESSITY.

In the lowest stages of savagery we find each man supplying his own wants. As he advanced a little in the scale of civilization his wants increased, and there was instituted the first division of labor. This division has continually increased until at the present time we find the occupations of man innumerable. In the first stages there was no such thing as capital. Then, and only then, were men on an equal financial footing. There soon came into existence something known as capital. There came into existence with this, and destined to stay with it always, a being known as the capitalist. Ever since, the great bulk of wealth has been more or less in the hands of a few. Those who cannot possess this wealth are naturally dissatisfied, and we find them with deep-laid plans and schemes to rid themselves of the man whom they consider such a powerful enemy, the capitalist. The most natural idea that presents itself to the ignorant mind in such a case is that of the socialists. Abundant proof may be given to show their plans to be utterly impossible. There must be the two classes—capitalists and laborers. To destroy one is to destroy the other. The time is coming when they will see that it is necessary for them to be friends, not enemies; when all their difficulties will be settled peaceably, and strikes and riots will become a thing of the past.—*Ralph Snyder.*

INDIVIDUALITY ESSENTIAL TO COMMUNITY.

The almost universal disposition to follow custom and to war against individuality marks the chief danger to modern institutions. Degradation has everywhere attended a people who found satisfaction by a few attaining proficiency in powers, leaving the masses isolated, undeveloped, uncivilized. There is no unity of the people, consequently ruin to the nation. A proper unity among the masses can only be obtained by a systematic development of the individual. The greatest strength in government is where every man can do his own thinking. Individuality is a right. Take it away and you have taken from our system its assimilating power, the remains will be despotic. In spite of our advance in learning there is a feeling prevalent against the philosophy of individuality. So long as this feeling is rife we cannot hope to keep our Government far above mediocrity. Honest, intelligent people should understand that although the powers and circumstances which constitute the individual in society are "distinct like the billows," yet they act harmoniously together and are "one like the sea." When everyone is so developed that he can act independently in his individual sphere the powers of man

will be as permanent as those in the realms of physical life, where—

"All are but parts of one stupendous whole,
Whose body nature is, and God the soul."
—George E. Stoker.

NECESSITY OF TRUTH SEEKING.

One of the characteristics of all men is curiosity; untrained, it seems only a means for amusement; trained, it becomes the incentive to the highest and noblest efforts. This trained curiosity, truth seeking, is the great spur to the acquisition of knowledge. The advancement of the race keeps pace with the increase of knowledge. We find civilization and the search for truth for its own sake hand in hand in ancient Greece, both wanting during the Dark Ages, and both reinstated in our own time. No one can tell the value of a new truth or decide where and when the most important knowledge can be found. Hence the ambition of students to discover and blend all truth in one grand whole is the best policy. For in the search for truth as in the search for minerals the careful survey is vastly more successful than the most untiring efforts of unguided fortune hunters. The wonderful applications of electricity and steam were rendered possible by discoveries made when both were valued only as scientific phenomena. However the greatest benefits arising from the search for truth come from the improvement of the race. Can wealth express the worth of an intelligent progressive people?—Walter T. Swingle.

COMMERCE AND PROGRESS.

Four hundred years ago America was yet unknown. The lamp of Christianity had long been lighted but had almost ceased to shine. In the insatiable longing for liberty, the dawning of a brighter day appeared. The Mayflower bore the healthy germs of commerce across the Atlantic and planted them in the western world. When the modern age of commerce came, humanity applied the truths of nature to the machinery of civilization and then, for the first time in the history of the world, was the one great principle of national growth made possible—the brotherhood of man. No man can serve himself alone. The world must help each individual to become a man. This is the secret of success. This, commerce has accomplished. It has brought into the most harmonious relations, mind with mind, nature with nature, and life with life. The broad Atlantic means no longer a vast wilderness of water inhabited by naught save the demons of the mighty deep; it has attained a broader significance. Upon its crested billow the sailor builds his home. His houses are the flying meteors of trade and commerce. Through the agency of modern genius, commerce has become a messenger as swift as lightning and as powerful as the elements of nature. Thus nations which knew each other not are brought face to face, where each may share the good of all others on a common soil.—Gilbert J. VanZile.

THE DIGNITY OF LABOR.

Inseparably connected with the history of man is the history of his labor. From the beginning man has labored, and to the end he will labor. Man is the nucleus of modern life. Through labor man and nature are brought together. Nature turns rocks into soil, collects rivulets into swift-running streams, and stores minerals in the chambers of the earth. Man, through the agency of labor, turns the sod, plants the seed, and gathers the crop; he stops the course of rivers, turns their silent force into motive power, and the wheels of industry are turned. He, with the key of labor, unlocks the chambers of the earth and brings forth coal. By its combustion water is converted into steam. Man through labor becomes intelligent by grasping the secrets of nature. But what has labor done for the moral part of man? It has lifted him out of the darkness of degradation into the light of prosperity. It is the common bond which unites the greatest worker in the president's chair to the humblest toiler in the field. Let no man be ashamed of his work if it is honest. It is the golden instrument placed in his hand by which he is enabled to reach success, happiness, fame, and fortune.—Harry N. Whitford.

OUR CIVILIZATION.

At the close of this our first century as a nation we are proud of our achievements. We are truly and thoroughly American. The founders of our republic amidst obstacles gave the most vital elements of our modern civilization. As a result our national resources are unlimited. The products of her manufactories are to be seen on every hand, while our flag floats unchallenged on every sea

and in every harbor. We have our share of great men and great minds. But with success come evils. The anarchist and the socialist are with us. Oppression and intemperance are seen on every hand. The evils must be remedied. Legislation will not do it. Education and religion must lead us onward to higher aims and nobler achievements. Let us aid these in their work until the United States shall be, as she should be, the keystone in the arch of civilization.—Thomas E. Wimer.

MILITARY DISPLAY.

The display by the Military Department at 3 P. M. on Commencement Day took on a new form. There was but little time given to marching and the manual of arms, the chief feature of the drill being the assault and final capture of a battery composed of two field pieces supported by a company of sharp shooters, by five companies of infantry. The cannon situated on the campus a little north of east of the main College building, gave the vast audience congregated in the doors and windows, porches and lawns, and even on the tops of buildings and in trees, an excellent opportunity to see every movement made by the troops. The five companies advanced in skirmish line from the south side of the College grounds in what we suppose to be true military style. The cannon belched forth smoke, flame, and lots of noise, as they perhaps did in the days long past. The sharp shooters threw out a skirmish line who proceeded to go through the movements, doing good execution in the ranks of the enemy; but the infantry continued to advance steadily, keeping up an almost continuous firing. At last they charged with loud hurrahs, fixing bayonets as they ran, and the stars and stripes floated gracefully over the captured field pieces. At the command, each company fell in with a right good will and marched to Armory Hall, and the largest drill class ever in College broke ranks for the last time.

THE ALUMNI REUNION.

At four o'clock Commencement Day, were held in the College Chapel the exercises of the triennial reunion of the Alumni. The address was given by M. F. Leisure, Class of '77, on the subject, "Evolution of Thought." He traced its growth from primeval times through the different races and ages, dwelling with emphasis upon the difficulties encountered at all times. The men who advanced their theories about the universe and kept themselves above the superstitions of their times were the instruments which made the progress of thought possible. The decades of Feudalism and Chivalry were not without their effects in this direction. So it is that from age to age, from century to century, there has been a gradual growth and awakening in the intellect of man, until in our own time we have an age characterized by all the advancement which abilities and circumstances permit.

Following the address was the history of the Alumni, by Sam Kimble, Class of '73. History is to be made. The Alumni of the Kansas State Agricultural College have made a history that is a credit to their Alma Mater. Their work in the world is of a nature of which our College may well feel proud. To the Class of 1890 a few words were given. Their history is yet to be known. It commences today. The responsibility attached to them is that their record shall be an honor to those who have gone before.

At the business meeting the following officers were elected for the ensuing year: President, J. T. Willard, '83; Vice-President, Miss Phoebe Haines, '83; Secretary, Mrs. Nellie E. Cottrell Stiles, '87; Treasurer, Miss Emma A. Allen, '89.

THE BANQUET.

Wednesday evening found the family of graduates at the College again, to participate in the banquet. After an enjoyable hour of greeting, the call to supper was heard, and the company proceeded to the corridor on the top floor of the main building. Covers were laid for 150 guests, but those present fell a few short of that number. The spread, as usual, was the product of the Cooking Class, under direct supervision of Mrs. Kedzie. The tables were also served by the young ladies of the class.

The demands of the stomach being satisfied, a feast of a widely different, but none the less enjoyable nature was indulged in until a late hour. The many members of the programme preclude the possibility of the detailed mention which each deserves. Suffice it to say that the following programme was faithfully carried out:

PROGRAMME.

Quartette, "Clementine."	Regent Forsyth
Toast, "The Regents,"	Sentiment, Mrs. Bowen, '87
Toast, "A College Education,"	Response, Pres. Fairchild.
Toast, "Science,"	Sentiment, J. B. Brown, '87
	Response, James W. Berry, '83,
Solo and Chorus, "Polly Wally Doodle."	
Toast, "The Law,"	E. A. Allen, 87
	Response, D. G. Robertson, '86.
Toast, "The Graduates,"	Sentiment, Mrs. Ada Perry, '86
	Response, W. E. Whaley, '86.
Congregational Singing, "We're going to Skip College."	
Toast, "The Press,"	Sentiment, Mrs. Nellie Stiles, '87
	Response, D. W. Working, '88,
Toast, "The Faculty,"	Prof. Nellie S. Kedzie, '76
Toast, "The Future,"	Sentiment, Miss Julia Pearce, '90
Toast, "Our Alma Mater,"	Sentiment, E. H. Kern, '84
	Response, Miss Maude Sayers, '89.
Closing Song, Trio, "Alma Mater, O!"	

THE MUSIC.

The music on the following occasions was furnished to the great delight and pleasure of all by the College Orchestra and members of the instrumental and vocal classes under the direction and superior guidance of Prof. A. B. Brown:

SATURDAY, JUNE 7TH.	
Semi-Chorus, "The March,"	Southard
Quartette, "Return from the War,"	Gieffe
SUNDAY, JUNE 8TH.	
String Quintette (Organ and two Pianos), "Traumerei,"	Schumann
Hymn, "Holy Ghost with Love Divine,"	Gottschalk
Solo and Chorus, "O Father Almighty,"	Haydn
Solo, "One Sweetly Solemn Thought,"	Ambrosse
MONDAY, JUNE 9TH.	
Overture,	College Orchestra
Chorus, "Bridal Chorus" (from Lohengrin),	Wagner
Piano Solo, "Carnival de Venice,"	Schulhoff
Duet, "The Land of the Swallows,"	Masini
Solo, "A Bird from o'er the Sea,"	White
Semi-Chorus, "Come and Join the Merry Dance,"	Turney
TUESDAY EVENING, JUNE 10TH.	
Selection, "Medley of Waltzes,"	College Orchestra
Piano, twelve hands, "Cuirassier Galop,"	Muller
WEDNESDAY, JUNE 11TH.	
Overture, "Stradella,"	College Orchestra
Sacred Chorus, "I Will Praise Thee,"	Farmer
Pianos, eight hands, "Radieuse,"	Gottschalk
Selection, "Polka di Concert,"	College Orchestra
Vocal Trio, "Hark! the Curfew,"	Atwood
Opera Chorus, "Hail to Thee, Liberty!" (from Semiramide),	Rossini

COMMENCEMENT NOTES.

Prof. Olin deserves credit for skillfully managing the seating so as to prevent discomfort, confusion, or disturbance.

Prof. Hood displayed in the shop more than the usual collection of student's work—stands, tables, hat-racks, desks, book-cases, fancy boxes, etc., etc., many of which were marked "for sale."

Dr. White was the guest of Pres. Fairchild, an acquaintance of many years, having established many ties of friendship. He left Wednesday noon, expressing gratification in his visit to the College.

F. C. Sears, Third-year in 1888-9, came to see his class graduate, hoping to be one of the Class of '91. He has selected a trio of Shorthorn cattle from the College herd for his father's farm in Tescott.

Upon the platform with the regents were Dr. E. E. White, of Cincinnati; Dr. P. Brooke, of Manhattan; Governor Harvey, of Vinton; and Prof. J. E. Platt, for twenty years prior to 1883 a member of the Faculty.

The Class of 1890 inaugurated a new departure in the matter of photographs, by having a large class group made. A copy was on exhibition in the Secretary's office on Commencement Day, and the counterfeit presents of our good-looking young friends gained many admiring glances from the throng of visitors, and was the subject of considerable good-natured criticism by friends.

MANHATTAN ADVERTISEMENTS.

R. ALLINGHAM, dealer in Fresh and Salt Meats. Special attention to student trade. Goods delivered free.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

E. B. PURCELL, Corner of Poyntz Avenue and Second Street, has the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered in all parts of the city and at the College, free of charge.

PICKETT'S NEW LIVERY STABLE.—Everything new and strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

BATH ROOMS.—At Manhattan Shaving Parlor, South Second Street. Hot and cold baths always ready. Everything first-class. Special care taken with ladies' and children's hair cutting. Razors bought and sold. Give me a call. PETE HOSTRUP, Proprietor.

ESLIE H. SMITH, Boots and Shoes, 302 Poyntz Avenue, first door west of Stingley & Huntress. A full line of Rubber foot wear of the best quality at the lowest prices. Mens' all Solid Leather Dress Shoes, \$1.05. Ladies' Fine Dongola Button Shoes, \$2.00. Reliable goods at low prices.

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GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week-day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 P. M., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

THE BACCALAUREATE SERMON.

[By President Geo. T. Fairchild, Sunday, June 8th, 1890.]

Text—Psalms, 139:17, first clause—"How precious are thy thoughts unto me, O God!"

A long-cherished custom has given to the Sunday before graduation a special significance in college life. Today, in every State institution of Kansas, and perhaps a hundred other seats of learning, are gathered "clouds of witnesses," like this assembly, to the earnestness of life. The foster-mother, about to send her children on their several errands to the world, parts reluctantly without her last lesson of advice. This advice may be far from perfected wisdom; it may be but the oft-repeated admonitions of the bygone years. Yet, somehow, from this open portal into a workaday world there seems to be a clearer view of life than the ordinary, and a stronger desire to share with each new class the cautions of experience, and the suggestions of philosophic thought.

To you, the class of 1890, now standing on this vantage ground, gained by years of preparation, life seems broader than ever before. Its lines lead out indefinitely, touching a nation, perhaps a world, in their windings. Yet they are only lines in the great ocean of activity comprehended in our thought of civilization; and that ocean is but a drop in the universe of history; history itself is but an atom in our concept of infinite existence. So, by every glance out into the world, we are taught the incomprehensible ratio between our insignificant selves and the universe of God.

Is it possible that such glances, too hasty, have set the fashion, so thoughtlessly followed sometimes, of relegating all thoughts of God to the unknowable, unthinkable realm of infinite nothingness? It seems so; and, dwelling on this drift of fashion, I am led to contemplate the serious loss of good to every human soul that winds its little thread of life "without God in the world." Are you willing to think with me this half hour upon the interest we have in the thought of God?

I have gathered my thinking about a text from one of those suggestive utterances of David, the hero and the poet, the singer and the philosopher of Jewish history: "How precious are thy thoughts unto me, O God." It is found in the first clause of the 17th verse of Psalm 139, one of the grandest of poems. I venture the statement at the outset that the fundamental idea of God underlies and overlies all experiences, all researches, and all generalizations. Even one who denies the existence of a personal God, gives to matter and force the eternal attributes of God, reaching to the highest expression of personal qualities in results of action. No purely mechanical theory of the universe would be consistent with itself, even if it did not ignore the chief experiences of life. A whole world of mere matter and mechanical force can no more set itself in motion than can any of its parts. If this material universe of action is seeking the equilibrium of rest,—is running down, in short,—when, where, how, and by what energy was it wound up? If it is now in the process of evolution from unorganized rest to supreme activity, when, where, how, and by what energy is the organic activity begun and continued? If it is a perpetual motion, it transcends all ideas of mechanical relations, in which perpetuity is a contradiction. Force, then, in every theory of the universe, possesses the eternal, self-directive energy of God. Moreover, that eternal, self-existent excellency must possess, unlimited, the attributes of which we find evidence in our world of thought.

"For," as Paul says, "the invisible things of him, since the creation of the world, are clearly seen, being perceived through the things that are made, even his eternal power and divinity." We

need not the supernatural revelation of the God of nature to prove his existence in a universe of thought and rational activity.

Assuming then, this ever-present proof of God, let us study the good we find in accepting the fact, and in seeking to fit our actions to the thought in all our life.

In such a thought of God, our existence gains its highest qualities of good. All the senses—chief sources of experience—touch a material world, animate and inanimate, and show us to ourselves as partakers of the same matter. Every inquisitive touch of science makes more intricate the array of variety, and more complete the unity, of this material world, combining, dissolving, growing, decaying, advancing, retreating, in one complexity of action. It is a delight to me to find in all this incomprehensible extent—too magnificent for thought, too minute for distinctions—the one all-father, God, forever energizing in his identical way of perfection. His laws are past finding out to completeness; but every thought upon them brings me into sympathy with nature, and exalts the least atom to a place in the realm of his power. The dust that I spurn with disgust, be it an angel of his wrath or of his mercy, belongs to the dispensation of his never-varying laws. I love to dwell upon this thought, that all this commotion of the elements, before which I stand in mute astonishment sometimes, shows after all such evenly-adjusted forces that progress is insured and plan secured; that the to me inevitable laws of matter and force are the ways of one in whose hand my breath is, so that all accords with one distinctive thought, and absolute unity is found. Such a thought has made the world's investigators both inquisitive and reverent. The wonderful works of God have been the theme of each inquiring age; and still, to this day, irreverent atheism rests, not on the permanent facts of the universe, but on the flitting fancies of scheming opponents to the rule of supreme intelligence. As each new set of facts has come under more complete observation, it has made more true the saying of Bacon, "God never wrought his miracles to convince atheism; for his ordinary works convince it."

Again, a study of this grand array of facts in external nature reveals us to ourselves as knowing and thinking. Puzzle as we may over the wondrous machinery of nerve and brain, by which our bodies join us to the world of matter, there must forever remain the simple fact of knowing, through which we discover the machinery of sense. The knowledge of myself as a thinking being lifts me at once above the unthinking elements that compose my body. It inspires in me a clearer idea of insight, oversight, and foresight in the great "I am." It makes a world of matter without plan an absurdity. It stimulates my inquiry into the plan of the universe. It shows me that knowledge is the first element of power. It drives me to the reverent consideration of wisdom as shown in the forces about me, and compels me, with that most diligent astronomer, Kepler, to say, "I think my thoughts after thee, O God." But finding that God's power is revealed in myself, I rejoice again in the assurance that his presence is a thoughtful presence. My insight is imperfect; God's must be complete. My oversight is intermittent; God's can never flag. My foresight is pure guess work; God's knowledge compasses eternity. Can I be other than glad to remember with the Psalmist, "When I awake I am still with thee?"

Quickened with such satisfaction, I find that all my being has its uses in the emotions. To feel the good of thought and sense is reason enough

for their existence. Every appetite, desire, and affection expresses an appreciative energy toward good in the universe that makes our humanity worth having. Multiplication and enlargement of wants alone make the world worth more to the race; make the members of the race worth more to each other. Truth and beauty grow more and more precious only through the cultivated sensibility that is able to reach after and cling to them. Even that higher type of perfection seen in duty well done must find its response in the gratified sensibility which attends conscience.

Yet all this grand array of present and prospective good, indefinite in amount and infinite in continuance, becomes apples of Sodom without the thought of God, whose image in this respect we share, whose power and knowledge involve the very reason for their use, whose joy includes our joy. If you and I are at the mercy of a mere force in the universe that knows and feels no sympathy with good, what a blot upon the plan our keen appreciation and our tender affections seem. Our thoughts of God make love his foremost attribute, because we need to love and to be loved in his all-embracing reign, as well as in the narrow confines of contact with fellows. Can anything be more precious than such thoughts of God as bring us into his love?

Drawn now by many motives, urged by appetites and impelled by clear insight, I find myself under the necessity of choice. Acts that can never cease to have results; results that no calculation of mine can limit, hang upon the choice of a moment. Between blind impulse and rational foresight, I am in a strait. Emotion says, "Do as you feel;" conscience says, "Do as you know;" and rational choice alone makes manhood. Here comes in the all-embracing sense of duty that for manly men outranks all other motives. All that is noble in humanity gathers round duty fulfilled. Friendship, home, liberty, patriotism, philanthropy, and religion are but many names for the same fulfilled duty in the various relations of humanity. The rational choice of good, the love which is the fulfilling of all law, takes in, not fellow men alone, but every beast and bird that feels beneath us, and every loftier being that may enjoy being above us. It reaches to God, who gives this lofty choice, and makes our human nature a law within itself—a law of righteousness with virtue's sure reward.

From such a realization of true virtue, the thought of God gains its most inspiring influence in human welfare. God rules, not with force alone, not with superior knowledge chiefly, not with kindly sympathies even, but with the law of righteousness. The Judge of all the earth does right, and every interest is guarded in the sway of his unlimited power. As you and I today strive ineffectually to grasp a tithe of our personal interests in physical, intellectual, emotional, and moral relation, it is true joy to trust in one unlimited support of all existence whose ways, past finding out, are still perfection.

No wonder that Shelley, avowed atheist as he was, loved nevertheless to think of a fine intellectual spirit pervading the universe. Is it not natural to cry out in ecstasy with the devout Kepler, "I give thanks to thee, Creator and Lord, that thou hast given me delight in thy creation, and I have exulted in the work of thy hands." "Praise God, O my soul, as long as I live. From him, through him, and in him, is all, the material as well as the spiritual, all that we know and all that we do not know as yet."

So all our joy in rational existence rests supremely on our thought of God. But today's existence is to a human being the least of his blessings. A brute lives chiefly in the present; a man finds in today the promise of tomorrow, and lets his pleasure wait upon his destiny. His des-

tiny—what meaning has it without God? What force have natural gifts, propensities, bents, talents, inspirations for individual accomplishments, with no efficient cause to give them unity? Humanity without a faith in destiny is worse than brutism; and yet our faith that kindles energy for highest achievement rests upon the sure foundation of the one God, "yesterday, today, and forever the same." Moreover, opportunities, practical openings in daily life, and those events that make achievements out of weaknesses, often so shaping our future as to make us seem but creatures of circumstance,—what continuity holds these together save the firm, all-wielding energy that gives us being? Environment means nothing without the interwoven influence of unity in purpose that gives the law of influence—the "divinity that shapes our ends, rough hew them how we will."

If destiny means all it should for individual beings, it includes the completeness of those beings. This body's destiny is settled when "the dust is returning to the earth as it was;" but to the conscious, thinking, feeling, willing man, that is no destiny. If it is not equally certain that "the spirit shall return unto God, who gave it," the completeness of the cycle mars its unity. But if this marvelous upbuilding of soul is rounded into the infinite welfare of God, I can meet destiny with perfect satisfaction. My destiny in the line of duty is as surely satisfying as is the certainty of eternity. I do not care to know the environments of my eternal dwelling place, if the same good God, who without my knowledge planned my being and my fortune here, will guard my every interest forever. How precious is that thought of God which can make you and me,

* * * * * "sustained and soothed
By an unfaltering trust, approach the grave
Like one who wraps the drapery of his couch
About him and lies down to pleasant dreams."

But if the destiny of individuals needs the thought of God to give it meaning, how much more is the same thought needed when we contemplate the destiny of nations, or of the world of nations. Much of the philosophy of life depends upon our study of what we call the drift of civilization. The unity of purpose implied in this complexity of national life and energy, with definite progress and outcome, speaks to my mind and to my soul of the God over all destines. My work and yours in line with such progress gains zest from the assurance that his problems for men must be solved among men. The wrongs of the past have secured the rights of the present, and the evils of today drive us to their cure. We fall into line with God's plan for the nation when we accept thought of such an over-ruling providence in national life. He who will not study for such purpose is likely to be found "fighting against God." He is well-named leader, reformer, statesman, who can follow the line of growth most surely and most promptly. But students of history have long since learned that the great leaders in every national growth become such in the march of destiny.

They are instruments of progress, rather than the forces; and rise from material surroundings and by methods of development not trusted in their generation. Even if these particular heroes had not existed, the times must have made others like them. Does it make us less or more ready material for such use, to be thinking the thoughts of God, and humbly seeking his uplifting? Was Abraham Lincoln less or more fitted for his high ministry to a shattered nation, because he needed no hard lessons, like Nebuchadnezzar's, to learn "that the Most High ruleth in the kingdom of men and giveth it to whomsoever he will?" The world is in best condition to be led when it most patiently, though earnestly, awaits the commission of its leaders in the spirit of trust in the God of destiny.

Moreover, the world has learned to see the good of evil. Even terrible passions, greed of gain, and blasphemous assumptions have brought the upbuilding of righteousness, charity, and peace. The very barbarity of barbarism has wrought civilization. The very demon of crime insures the rule of the Goddess of Liberty. No social philosopher who studies history can fall into despair because evils are rife; for evils have been the spur to progress for all time. But to me the fact means more, encourages more, stimulates more in the thought of God, whose lasting purpose for his creatures gloriously over-rules evil for good, and makes even the wrath of man to praise him.

But destiny reaches farther than national life, farther even than the progress of the world in civilization. End in the universe is inconceivable; but this spot, this time, this group, this world,—all must end in the natural sequence of events. What thought is sufficient for the universal and perpetual progress but the thought of God? We need not sympathize with those foreboding souls who groan in spirit over the final exhaustion of coal fields and forests; since each age brings the new supply for new wants. But for the continued harmony of all conflicting elements, for the unity of opposing forces, and for the perpetuity of welfare in the conceivable universe, we heed the God of nature. So the universe as it is, and as it is to be, seen and foreseen in the light of truest research and strongest reason, must abide with the thoughts of God. The more closely we cherish these thoughts, the surer we are to find the lines of truth, duty, and welfare; for I believe in the thought uttered first some thousands of years ago by the Hebrew law-giver, but which, today, as Pres. Eliot, of Harvard, says, "science utters as the sum of all its teaching, the sublime result of all its searching and its meditations, and applies alike to the whole universe, and to its least atom, 'The eternal God is thy refuge, and underneath are the everlasting arms.'"

I conclude, then, that one who dwells in satisfaction upon thoughts of God is in the best mood to accept the universal law and order and progress of the universe. Any unfolding of God's method with matter, with animate existence, or with men, he gladly accepts as so much more testimony to the glory of divinity and the conservation of eternity. The unity of energy in terms of science is already provided for in his faith, and the ideal entity, the fundamental cause of all existence, is in his trusted Jehovah.

The attitude of the true man toward this incomprehensible unity is one of faith. God is always "unknown and yet known," in the sense that no bounds can be set to his attributes while we are sure of their character. To trust all interests implicitly to such a God is not simply a duty; it is a pleasure, and the contemplation of his wonder-working power for good leads us to rest in the fact of its permanence with joy; to expect with confidence a further unfolding of the mysteries of nature; and to await in trustful prayer the future joys of earth and the greater hopes of heaven.

If you ask why some whose names are enrolled among the devotees of science have found little time for thoughts of God, I cannot answer, unless they have been too busy with details to follow out the logic of their thoughts. Perhaps some of them illustrate again the saying of Bacon: "A little superficial knowledge of philosophy may incline the mind of man to atheism, but a further proceeding therein doth bring the mind back again to religion." The true relation between the thought of God and scientific truth I find well expressed by Samuel Harris: "Of God, we know that the reality of his being is assured, because, without it, science is meaningless, philosophy is impossible, and knowledge vanishes like a dream." Thought

cannot comprehend God, but by him it comprehends the universe.

In this consideration of the importance of such thoughts of God, I have made no mention of those lofty sentiments and keen emotions of thanksgiving and praise which make so much of a Christian's joy, the result of perfected faith. I have barely hinted at those overwhelming motives to uprightness presented in God's revelation of himself through his written word. The child-like love of the Christian seeker after God, which causes him to nestle peacefully in the "everlasting arms," I have left you to infer. The prayer "Our Father," is the natural sequence of any careful thought of God. All these are experiences that cannot be told; they must be felt. That they are real is proved by most competent witnesses in every age of the world. They are such as you now trust most fully.

Let me ask you, then, with the yearning that clings to the last breath of influence that I may have in your lives, to make the most of those precious thoughts of God. Take the way toward him in the lessons and the life of Christ, who testifies of God to the simplest and to the loftiest minds. Having tested such thoughts and yielded to their influence, you may agree with one whose name has long stood high on the roll of scientific benefactors of the race, Sir Humphrey Davy: "If I would choose what would be most delightful to me, I should prefer a firm religious belief to any other blessing; for it makes life a discipline of goodness, creates new hopes when all earthly hopes vanish, throws over the decay and the destruction of existence the most gorgeous of all light, awakens life in death, and from corruption and decay calls up beauty and divinity."

May our Heavenly Father so reveal himself in your life, that your thoughts of God may be precious in years that are to blend your deeds and your being with the everlasting progress of the universe.

BOARD MEETING.

All the Regents were present last week at the meeting connected with Commencement exercises.

The degree of Bachelor of Science was conferred upon the twenty-seven graduates; and the degree of Master of Science upon Geo. E. Hopper, '85, and Abbie L. Marlatt, '88, after post-graduate courses.

The Experiment Station Council was authorized to go forward with the work undertaken, and to expend the balance of the appropriation accordingly.

The Committee on Employes was directed to find a suitable person for the Chair of Zoology, Physiology, and Veterinary Science, and report at the next meeting; also to secure the services of a competent instructor in Physics and Telegraphy.

The salaries of Professors Lantz, Walters, and Olin were raised to \$1,500, from September 1st next. Those of Assistants Mason, Cottrell, and Shelton were restored to \$800; and those of Assistants Swingle and Marlatt were made \$600, from July 1st next. Assistant Breese is to have \$800, after September 1st next; and Miss Jennie Tunnell, \$35 a month.

The Station Council was granted authority to plan, as may seem best, for exhibition, either at the State Fair or at a State Institute to be held at the College later in the season.

Provision was made for advertising during the year in limited amount by Pres. Fairchild.

The Committee on Grounds and Buildings was authorized to go forward as opportunity allows with the building of the walk to the avenue.

The Secretary was appointed a special committee to draft the biennial report and present at the next meeting.

The Board adjourned to meet on Tuesday, August 19th next, at three o'clock P. M.

LOCAL MATTERS.

Hands in the Farm Department are cutting wheat this week.

It is thought that there will be at least forty members of the Class of 1891.

Mrs. F. M. Rains and children, of Topeka, are the guests of Secy. and Mrs. Graham.

Prof. Olin and family returned last Monday from a few days' visit at Tonganoxie.

Five members of the graduating class are now attending the Teachers' Institute in Manhattan.

The buildings are being put through a thorough course of "house-cleaning" in readiness for next fall.

Lieut. Morrison bade adieu to all College attractions and started for West Point, N. Y., last Monday.

Prof. White visits, this summer, his friends in Eastern cities, including Princeton College, which conferred upon him last week the degree of Master of Arts.

Prof. Walters lectured before the Morris County Teachers' Institute, at Council Grove, on Wednesday evening, presenting a plea for industrial education.

It is impossible to enumerate the multitudes of familiar names of former students among those who graced the Commencement exercises. The whole week was a re-union, filled with greetings of old friends.

Advanced copies of the new catalogue were issued for Commencement, adding to the interest of the gathered alumni by the general catalogue of officers and graduates since the foundation of the College.

Mrs. Kedzie left Saturday last for a brief visit with her father and brother at Birmingham, Mo., and an extended tour through the great cities, where she will visit cooking schools, and finally away down east to her birth-place in Maine.

Secretary Graham returned on Tuesday from his not very successful fishing excursion in Chase County, too unwell to enjoy even what he found. Superintendent Thompson extended his visit to Newton, his old home, and returned Friday.

Pres. Fairchild, with wife and daughter, left Wednesday noon for an extended visit in Ohio and Michigan. They hope to spend some weeks at Mackinaw, and the President will attend the National Educational Association at St. Paul, in July.

Mr. S. C. Mason has been away for the past ten days on a trip to Brookings, Dakota, to attend the funeral of his brother-in-law, C. J. Cote, who died at Madison, Nebraska. The deceased was Secretary of the South Dakota Agricultural College.

GRADUATES AND FORMER STUDENTS.

J. G. Harbord, '86, sent greeting to the gathered Alumni, from his soldier home at Fort Spokane.

D. G. Fairchild, '88, will meet his parents in Ohio, to attend the Commencement exercises at Oberlin, where E. M. Fairchild takes the degree of A. B.

Abbie L. Marlatt, '88, and Mary Marlatt, former student, started Wednesday for a tour of eastern cities, visiting their brother, C. L. Marlatt, '84, at Washington, D. C.

W. E. Thackrey, Third-year in '88, writes from the Sac and Fox Agency, I. T., where he is teaching: "I am getting along very well. Please send me the INDUSTRIALIST."

H. E. Robb, '88, writes of success in farming the home place near Neal, Greenwood County. He is interested in the College and its work, and inquires concerning many old friends.

O. L. Utter, '88, thinks the work of civilizing young braves at the Indian school, near Arkansas City, is not the most interesting teaching of his experience. He longs for a little civilizing influence of good society for himself.

Abbie L. Marlatt, '88, who received at Commencement the Master's degree for proficiency in Chemistry and Domestic Economy, has accepted an appointment as Instructor in Domestic Economy and Sewing in the Utah Agricultural College, at Logan.

The Alumni of the College now make a body of whom any College might be proud. The tally sheet shows 69 of the 198 enrolled previous to this year's class of 27 to have been present, and several brought a better half. Of the Class of '67, Mrs. Belle M. Haines Pond, and Mrs. Emma L. Haines Bowen; Class of '73, Sam Kimble; Class of '75, R. E. Lofinck; Class of '76, Mrs. Nellie Sawyer Kedzie; Class of '77, Ella S. Child, G. H. Failyer, M. F. Leisure, and William Ulrich; Class of '79, W. H. Sikes; Class of '80, Mrs. Grace Parker Perry; Class of '83, J. W. Berry, Mary C. Bower, Emma E. Glossop, W. J. Griffing, Phoebe E. Haines, J. T. Willard; Class of '84, B. Buchli, H. M. Cottrell, Mrs. Carrie F. Donaldson Brown, I. D. Gardiner, E. H. Kern, Mrs. Hattie L. Peck Berry; Class of '85, G. E. Hopper, Mrs. Dorothy E. C. Secrest Hungerford, Mrs. Effie E. Woods Shartel; Class of '86, E. Ada Little, E. H. Perry, H. A. Platt, Mrs. Ada H. Quinby Perry, Mrs. Ida H. Quinby Gardiner, D. G. Robertson, E. O. Sisson, W. E. Whaley; Class of '87, E. A. Allen, C. M. Breese, J. B. Brown, W. J. Burtis, Mrs. Nellie E. Cottrell Stiles, F. B. Elliot, F. G. Kimball, F. A. Marlatt, Mary E. Moses, S. N. Peck, W. M. Wright; Class of '88, Bertha H. Bacheller, L. H. Dixon, J. R. Harrison, H. W. Jones, Abbie L. Marlatt, W. C. Moore, Anna Snyder, Lora L. Waters, D. W. Working; Class of '89, Emma A. Allen, J. W. Bayles, S. S. Cobb, J. H. Criswell, A. B. Kimball, Mary C. Lee, Susan W. Nichols, W. H. Olin, Maude F. Sayers, Florence Secrest, C. W. Thompson, Jane C. Tunnell, Ina M. Turner, R. U. Waldraven, H. S. Willard.

COLLEGE LIVE-STOCK FOR SALE.

We call the attention of our readers to the fact that the Board of Regents of the College have authorized the sale of a number of Shorthorns and Jerseys from the College herd, which is deemed too large for the means of maintenance and the needs of the institution, numbering, as it does, upwards of 50 head. Among the Shorthorns offered for sale are thirteen cows and heifers, all fine specimens of the breed, that will prove valuable acquisitions to any herd. Here is a chance of getting some good foundation stock which breeders and admirers of good Shorthorns should not fail to improve. They will be sold at reasonable prices considering their breeding and individual merit. The cows have all been bred to Scottish Chief 89317, one of the finest Cruickshank bulls in the State, and the heifers offered are of his get. Several of the young cows are by the fine imported Cruickshank bull Thistletop 83876, now in Colonel Harris's herd, Linwood, Kansas.

Among the Jerseys are several young cows, now getting into the prime of life, all of Herd-Book stock, which will be sold for \$75.00 each.

Persons who contemplate buying are cordially invited to visit the College and inspect the herd; and correspondence on the subject is solicited by the Professor of Agriculture, who will furnish all desired information in regard to prices and pedigrees.

COLLEGE SOCIETIES.

CHEMICAL LABORATORY, May 29th, 1890. In the absence of Prof. Hood, the Scientific Club was called to order by the Vice President, J. T. Willard. The Secretary being absent, Lieut. Morrison was appointed Secretary pro tem. Prof. Georgeson, after stating briefly the method of growing rice as practiced in Japan, gave an interesting account of an experiment with fertilizers on rice, which he conducted while in that country. The beneficial effect of a complete fertilizer, and the specific influence of nitrogen in increasing the tillering, was clearly shown. Assistant Marlatt described the arrangement of the muscles in the legs of an insect. The muscles are safely incased in the bony skeleton, and as they act upon very short lever-arms in a ball-and-socket joint, they must be of comparatively great strength. Mr. E. P. Smith gave an interesting resume of the more important articles on subjects relating to physics and engineering that have appeared during May. Mr. Willard called the attention of the Club to the alleged discovery of a new gaseous element. It is said to have one-half the density and valence of hydrogen, and to have extraordinary reducing powers. If the statements are confirmed, the discovery will have a far-reaching influence on chemical theory.

INDUSTRIAL TRAINING.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have Farming, Gardening and Fruit-growing, Carpentry, Cabinet-making, Iron-work, Printing, or Telegraphy. Young women may take Sewing, Printing, Telegraphy, Floriculture, or Music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second year and the fall term of the third year, upon the farm, gardens, and orchards. Young women take their industrials for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen, laboratory and dairy.

THE INDUSTRIALIST.

KANSAS EDUCATIONAL NOTES.

PROF. J. D. WALTERS.

The library of Baker University contains about 3,500 volumes.

The State Normal School has graduated fifty-three pupils this year.

The first annual catalogue of Oberlin (Kansas) College shows an enrollment of over seventy-five students.

The Leavenworth High School has graduated twenty-three pupils this year. The Commencement was held this week.

The formal inauguration of Chancellor Snow, of the State University, took place June 12th, in connection with the exercises of Commencement week.

Rev. Dr. Milner, President of the Ottawa Chautauqua, reports the attendance and outlook for that meeting better than ever before during the first week.

Prof. J. H. Canfield, of the State University, delivered the annual Commencement address before the St. James Military Institute at Salina, week before last.

Six of Wellington's school ma'ams are to be married during the coming vacation. A woman who can make her own living never has any trouble in getting a husband.

State Superintendent Geo. W. Winans is making a lecturing tour along some railroad line every week, intending to reach a third or more of the Normal Institutes held this year in the State.

Vernon L. Kellogg has severed his connection with the Lawrence *Journal*, having been elected to a professorship in the University some time ago. He is going to "spook" around after birds and bugs in Colorado until the fall term opens.

A number of County Normals have the weekly holiday on Monday instead of on Saturday, the exercises commencing Tuesday morning and closing on Saturday noon, in order to give those from country districts a chance to go home over Sunday. The Monday holiday is gaining every year.

The catalogue of Baker University for 1889-90 shows an attendance in the Collegiate Department of 124 students, in the Academic Department 178, in the Normal 30, in the Commercial Department 51, in the Music Department 74, in the Art Department 30, in Penmanship 93, in Elocution 44; total, discarding names repeated, 424. There are eleven States and Territories represented, and 397 students from Kansas enrolled.

The editor of this column had the opportunity this week to attend a number of the classes of the Morris County Institute, and is glad to pronounce it a success. The enrollment on the day of the visit was about one hundred, with a dozen or more to come; while the work done by Conductor J. W. Quay and his assistants, Prof. I. M. Rhodes and Miss Maggie A. Mack, was of the most thorough and practical kind. Every word spoken showed that the instructors were at home in the school room,—teachers of ripe experience and rare scholastic attainments. We congratulate Supt. A. H. Bushy on his success in giving Morris County such a Normal.

The New Haven (Conn.) *Journal* speaks in high terms of the popularity of Prof. S. W. Williston, recently elected to the chair of Paleontology and Geology in our State University. The students of his department gathered one evening at his home and presented him with a memento in the form of an elegant gold watch, on which was engraved: "Presented to S. W. Williston, M. D., by his pupils in the Yale Medical School, June 13, '90." Prof. Williston has been associated in scientific work with Prof. March for many years past, and was health officer of New Haven for a number of years. He is a graduate of the Kansas State Agricultural College.

Affairs at Haskell Indian Institute at Lawrence are still in bad shape on account of the bad feeling between employees and the Superintendent, and several resignations, some by request, have been announced within the past week. The Indian pupils, too, seem to be dissatisfied. Last week a petition, signed by about 250 of them, was sent to the Secretary of the Interior, requesting the removal of the Superintendent, Chas. F. Meserve. The document states that he does not know how to treat Indians; that he calls them

thieves and liars in the assembly-room; and that they will all leave in a body if he is to remain at the head of the institution.

The parents and teachers of the State are watching the American school-book trust with a great deal of distrust just now. The concern calls itself the American Book Company, and consists of a consolidation of the school-book departments of D. Appleton & Co., A. S. Barnes & Co., Ivison, Blakeman, & Co., and Harper & Bro., of New York; and Van Antwerp, Bragg, & Co., of Cincinnati. The text-books which have thus been acquired by the Company have been intimately associated with the history of educational progress in this country for over half a century, and there is no doubt that the Company will devote its best efforts to sustain the great reputation these lines have achieved. To this end, it will seek the aid and co-operation of educators and authors in maintaining the quality and accuracy of its publications, and in the preparation of such new and original books as the progressive demands of the schools shall warrant. But the question anxiously put by the patrons is: "What about the prices?"

COURSE OF STUDY.

The necessity for so adjusting various branches of a course of study that there shall be as little waste as possible in acquiring both information and discipline, is felt by every teacher. Such a course is not designed to be absolutely inflexible, but to guide the judgment into some definite line of progress from which no mere whim shall turn a student aside.

Each student is expected to take three studies besides one hour's practice in an industrial art; and variation from this rule can be made only with the consent of the Faculty.

Parallel Courses are offered to both sexes, with such differences as their necessities seem to call for. The following gives the general scope of the two, but fuller explanations are found in the Annual Catalogue:—

FIRST YEAR.

Fall Term: Arithmetic. English Analysis. Geometrical Drawing. Industrial.

Winter Term: Book-keeping. English Structure. United States History. Free-hand Drawing three times a week. Industrial.

Spring Term: Algebra. English Composition. Botany. Industrial (Carpentry or Sewing).

SECOND YEAR.

Fall Term: Algebra completed. Elementary Chemistry. Horticulture. Industrial.

Winter Term: Geometry. Agriculture or Household Economy. Organic Chemistry and Mineralogy. Twelve Lectures in Military Science. Industrial (Cooking).

Spring Term: Geometry completed. Projection Drawing. Entomology. Analytical Chemistry. Twenty Lectures in Military Science. Industrial (Farm and Garden or Dairy).

THIRD YEAR.

Fall Term: Trigonometry and Surveying. Anatomy and Physiology. General History. Industrial (Farm and Garden).

Winter Term: Mechanics. Agricultural Chemistry. Rhetoric. Industrial.

Spring Term: Civil Engineering or Hygiene. Physics. English Literature. Perspective Drawing two hours a week. Industrial.

FOURTH YEAR.

Fall Term: Agriculture or Literature. Physics and Meteorology. Psychology. Industrial.

Winter Term: Logic, Deductive and Inductive. Zoology and Veterinary Science. Structural Botany. Industrial.

Spring Term: Geology. United States Constitution. Political Economy. Industrial.

The daily routine requires chapel at 8:30 A. M., and classes from 8:50 A. M. to 1 P. M., as shown under "Class Hours." Class rhetorical exercises are held weekly. Military drill is twice a week. On every Friday afternoon, at 1:30, all attend the public lecture or rhetorical exercises in chapel.

Special Courses.—Persons of suitable age or advancement who desire to pursue such branches of study as are most directly related to agriculture or other industries may select such studies under the advice of the Faculty. Assaying and Pharmaceutical Chemistry may be provided for by special arrangement when students are qualified to pursue them.

Vocal Music.—All students are furnished instruction in vocal music free of charge, under direction of the Faculty. Classes meet on Mondays and Wednesdays for advanced pupils, and for beginners on Tuesdays and Thursdays, at 1:30 P. M. The advanced class shares in the music of public exercises during the Commencement week. This study is taken up at the choice of the student, but regular attendance is required as at other classes until excuse is granted.

Arrangements for special voice culture may be made with the Professor in charge, on reasonable terms.

Military Training.—During the second year, a course of thirty-two lectures is given. These are designed to show how an army is organized, equipped, and supplied, to explain some of the minor operations of war, to show the organization of the militia, and the militia law of this State. Instruction is afforded, to such as desire it, in other military subjects.

To those who desire it, an opportunity is given for practice in the ordinary infantry drill, including the school of the soldier, company, and battalion, and target practice. Although drill is thus made optional, students are not allowed to take it for periods shorter than one term. To obtain a proper proficiency, however, one should take the semi-weekly drill for at least a year.

EXPENSES.

Tuition is free, and no general fee for incidental or contingent expenses is charged. In a few special departments of instruction, the following payments are made in advance to the Secretary:

In the term of Analytical Chemistry, students pay \$3 for the chemicals and apparatus used in their laboratory practice and analysis.

In the Printing Office, young men, in their first year, pay \$3 a term for office expenses. Advanced students have the use of the office for the work performed during the industrial hours.

In Telegraphy, young men pay \$3 a term for office expenses.

Young women are furnished both Printing and Telegraphy free of expense, these two offices, with the Sewing and Cooking Departments, being provided especially for their industrial training.

Lessons in instrumental music—two a week—are from \$10 to \$15 a term, according to its length; one a week, \$6 to \$8.40. One-half is to be paid to the instructor in charge with the first lesson, the other half at the middle of the term.

The cost of text-books at the book stores is, for the first year, about \$4 a term; for the second year, \$2.75 a term; for the third year, \$7 a term; and for the fourth year, \$5.50 a term.

The expenses for apparatus and tools to each student during the course are as follows: Drawing, \$3.50; microscope for Botany and Entomology, \$1.50; case, pins, etc., for Entomology, \$2.25; rules, in carpentry 25 cents, printing 25 cents. The total expense for these articles during the four years is less than ten dollars.

Board and washing are not furnished by the College. Board, with furnished rooms, can be procured in private families at from \$2.75 to \$4 per week. Some students board themselves at even less cost; and rooms for the purpose can be obtained at a rent of from \$1 to \$3.50 a month. Washing costs from 50c. to \$1 a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$100 to \$200 a year.

LABOR AND EARNINGS.

Every encouragement is given to habits of daily manual labor during the College course. Only one hour of daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their abilities and means.

All labor at the College is under the direction of the Superintendents of the departments, and offers opportunity for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed.

The shops and offices are opened afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed—outside of required hours of labor—upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates varying with services rendered, from eight to ten cents an hour. The Superintendents strive to adjust their work to the necessities of students, and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay-roll for the past year ranges from \$250 to \$400.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term time, or from other sources, for the larger part of their expenses. The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

TERMS OF ADMISSION.

Applicants for admission at the beginning of the College year must be at least fourteen years of age, and able to pass a satisfactory examination in reading, spelling, writing, arithmetic, including percentage and interest, geography, and elements of English grammar. Those applying later in the year must show sufficient advancement to enter the classes already in progress. Every effort should be made to begin with the first day of a term, in order to advance with classes from the first.

Applicants of mature age who, for lack of advantages, are unable to pass the full examination, may be received on special conditions.

MANHATTAN ADVERTISEMENTS.

R. ALLINGHAM, dealer in Fresh and Salt Meats. Special attention to student trade. Goods delivered free.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

E. B. PURCELL, Corner of Poyntz Avenue and Second Street, has the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered in all parts of the city and at the College, free of charge.

PICKETT'S NEW LIVERY STABLE.—Everything new and strictly first-class. Special attention will be given to student trade. Prices will suit you. Stable three doors east of Commercial Hotel.

BATH ROOMS.—At Manhattan Shaving Parlor, South Second Street. Hot and cold baths always ready. Everything first-class. Special care taken with ladies' and children's hair cutting. Razors bought and sold. Give me a call. PETE HOSTRUP, Proprietor.

ESLIE H. SMITH, Boots and Shoes, 202 Poyntz Avenue, first door west of Stingley & Huntress. A full line of Rubber foot wear of the best quality at the lowest prices. Mens' all Solid Leather Dress Shoes, \$1.65. Ladies' Fine Dongola Button Shoes, \$2.00. Reliable goods at low prices.

R. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds. Watches, Clocks, a magnificent line of Jewelry of the best makes. A big variety of Notions that students need. Musical Instruments, Strings, Sheet Music, Instruction Books. Our collection of Spectacles in gold, silver, and steel cannot be beat. Don't forget our ten-cent bargain counter. Everything at lowest living prices.—"75."

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GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship, and deportment shows to each student his standing in the College.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 p. m., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third- and fourth-year classes. Once a week all the classes meet, in their class-rooms, for exercise in elocution and correct expression.

There are four prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the last Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College society room, led by a member of the Faculty. On the Sabbath, students are expected to attend service at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

CHARACTER.

[An abstract of the Annual Address at the Kansas State Agricultural College, June 10, 1890, by E. E. White, LL.D., Cincinnati.]

All life is dual. It has an inner being and an outer manifestation. Nature is but an effect—the manifestation of that Infinite One who is its source and life. "There lives and breathes a soul in all things; and that soul is God."

This dual being is eminently an attribute of man. Not only has he two natures, a physical body and an indwelling regal spirit, but each has its inner life and its outer life—a duality of existence.

In the moral life these two existences are distinguished in part by the terms character and conduct. Character is the inner principle of the moral life; conduct is that principle in its outer visible flow. Character is the fountain; conduct, the outflowing stream. Character is not only the inner principle of the moral life, but it is also its result—its creation. Every act of the soul leaves as its enduring result an increased power to act, and a tendency to act again in like manner. Power and tendency are the results of all soul action. The powers and tendencies resulting from moral action constitute moral character. Character is the total resultant of man's desires and intentions.

The human soul is not a mere canvas on which life throws her images of thought and desire only to vanish again, to give place to their succeeding shadows. Every thought, every emotion, every aspiration, every purpose arising in the soul, leaves its impress there and becomes a part of it. Man thus becomes a human soul. The thought I am now thinking, the feeling I am now cherishing, will live forever, an irreparable part of my existence.

The roots of what we are today run back under the soil of all our past life, and touch every past emotion and experience. Within us are the fruits of all our past life. There is in every human soul an unerring memory out of which nothing ever absolutely fades.

My next point is that man's real influence flows from his inner life,—that indwelling character is the source of man's power and success. The bulk of all a man does or says is the man himself. It is this inner man that is so mighty in influence, so irresistible in action.

The very presence of a truly great and good man exerts a mysterious power over us. Phillips tells us that O'Connell's audiences were always disappointed by the evident reserve force and beauty that lay back of his resistless eloquence. They wished O'Connell to put all of himself into speech, but the more he put into his words, the more they saw back of them.

This leads us to the fact that man's inner life is wrapped in no inscrutable secrecy. Character may be veiled, but it cannot be concealed. It is self-luminous. Every desire, every emotion, every purpose of the soul, has its outer expression. We wear our lives as we wear our garments; and we are known much better than we think. This outer expression of the inner life is the explanation of the art of the detective—an art that picks out a rogue in a crowd, or "spots" him as he alights from a railroad car at the station.

Let us now consider some of these outer signs of the inner life:—

1. The first of these soul-revealers is the temper, that nervous net-work which, when we least expect it, always pulls off our mask and reveals the inner working to the outer world. The temper will tell tales.

2. Another medium through which the soul looks out is the human face. The eye is the open window of the heart. "The manners of the eye,"

says Emerson, "reveal the whole interior of man." The eye is honest. It has a look of interest and a stare of indifference, an opening of confidence and a shutting of distrust, a sunshine for joy and a cloud for sorrow; and all this language has no counterfeit. The face is the open show-board of the heart. When a new joy streams into the soul, how it radiates from the countenance. Joy and sorrow, love and hatred, envy and adoration, are all mirrored in the face.

The face speaks a universal language that needs no interpretation. It is the beauty of the story which the face tells that makes it beautiful. "The faces which we love to look at over and over again," says Dr. Huntington, "must be such as are noble with moral dignity and are radiant with spiritual light, no matter about your Juno or your Apollo." "Beauty," says Emerson, "is the mark God has set on virtue."

On the contrary, if there be moral deformity in the heart, no matter how classical the features of the face, the unhallowed passions within will look out hideous and hateful. "A beautiful form," says Bacon, "is better than a beautiful face," but a beautiful behavior is better than either, for it adds beauty to both.

This principle is illustrated in the arts of sculpture and painting. These arts are based on the fact that the human soul is revealed through the body.

3. Another of these spirit-revealers is the voice, whose tones, like Eolian lyres, are the very breathings of the spirit within. The voice has a tone that flows unconsciously for every mood of mind or heart. The influence of the voice is familiar to every observing person. In its tones there lurks a power strong enough to quiet the raving of a maniac, as is illustrated in the voice-power of Miss Dix and Elizabeth Fry. The voice is not all harmony because human life is not.

4. Another tell-tale of the heart is the laugh. "Laughter," says Carlyle, "is the cipher-key with which we unlock the whole man." Steele observes that man is the only created being that laughs, all beings above him and all below him being serious; and hence man has been defined as the being that laughs.

Whatever may be true of this claim that laughter characterizes man, there is character in the laugh. It is a remark of B. F. Taylor that an honest man laughs in vowels and a mean man in consonants. When a man in laughter hisses through his teeth a coil of sybillants at you, look out for him; he will bear watching. The "cavernous laugh," the "horse laugh," the "crackling laugh," and "cooing cockle laugh" all tell their story.

5. The smile is the visible joy of the heart, mantling the face. "In the smile of some men," says Carlyle, "is the cold glitter of ice." The truest and sweetest of all human smiles is that which lights up the face of the mother as she looks down into the face of her child, awakening there a smile in return.

6. The most subtle of all spirit-revealers is the manners. Manners have been defined as a compound of form and spirit, spirited, acted into form. Sterne has well said that a wise man takes his hat from a peg very differently from a fool. "A noble and attractive every-day bearing," says Huntington, "comes of goodness of heart, of sincerity, of true refinement of life; and these are bred in years." The principle that rules a man's life makes his manners for him.

7. Language is a great revealer of man's inner resources. Words have been called soul-measures, but the value of words depends on what the soul puts into them. "Words have weight when there is a man back of them." The old proverb says,

"Silence is gold, and speech is only silver," but speech is gold when the soul has gold to put into it.

Still there are experiences of life deeper than words. Their only expression is the wasting form; their only rhetoric, the coffin and the hearse.

Whatever may be the means by which our inner life shines out, of one thing we may all be assured: what is in us will out in spite of all our shams and coverings. Genuine character tells.

Let us, in conclusion, carry this beautiful doctrine into life, and learn a few of its many practical lessons:—

1. It discloses a common error respecting the value of school training. There are those who ask of every branch of study, "Of what practical use will its facts be in the shop, or in the store, on the farm, or in the factory, in managing a railway, or a bank?" This doctrine shows that the abiding practical result of all study is soul power. Every search after truth leaves as its best result an increased power of search, and hence the act of acquiring knowledge is better than the knowledge itself. Knowledge may guide and enlighten, but power is the lucky winner of success. A superficial empiricist with a stock of facts is liable to blunder in every new application of his knowledge. Practical facts must be applied by an intelligent mind. A student once asked Mr. Opie, the great English painter, with what he mixed his paints. "With brains, sir!" was the suggestive reply. "Brains, sir!" is what is needed in all the pursuits of life.

2. This doctrine also explains the formation and power of habit. Every act of soul or body leaves, as an abiding result, power and tendency to act again in like manner; and every repetition increases such tendency. When an act repeats itself, unless resisted, habit is formed. Addison calls attention to the fact that mental habits are not so easily formed or sustained as those of the body. A virtuous and true life is an ascent, and every step upwards requires the putting forth of a new energy. Vice, on the contrary, is a descent. Every step adds to the momentum of its victim.

Man sows a desire and reaps an act; he sows an act and reaps a habit; he sows a habit and reaps a character; he sows a character and reaps a destiny. Thus, in four sowings, a wrong desire may end in a fearful destiny.

3. This doctrine constitutes the practical philosophy of personal influence. It is a great mistake to suppose that character and influence can be divorced. You might as well attempt to separate the stream from its fountain.

Where genuine character is wanting, there will always be missed that irresistible charm and power that come from indwelling goodness and manliness. We cannot become influential by the passage of a resolution. Our words must bear the stamp of a true life or they will not pass over the counters where influence is exchanged.

All that has been said leads to the one conclusion that character and influence are not accidents of life. They neither spring from the ground nor fall from the sky. They are in the man, at once the result and the reward of noble living.

Permit me to repeat, in conclusion, the parting words of Horace Mann to the young: "When bewildered by social display or tempted by the seductions of flattery, Orient yourself." Begin each new day by turning your back to the night, your face to the light, and your soul to heaven. Orient yourself.

Pitch not your tent on all the plain of sensual indulgence, and turn not by the wayside of life to feed on garbage or drink from that Circean cup that can transform you into a beast. Live true to the noble and divine impulses of your nature, and reason, and religion; nature and art, the universe within, and the universe without will spread daily for you the repast of a king.

The grandest result of human life is manhood, and the regal fact of manhood is character. A noble character is at once the joy and the victory of life.

THE COLLEGE, AND THE STATION—OBJECTS.

This College now accomplishes the objects of its endowments in several ways:—

First, it gives a substantial education to men and women. Such general information and discipline of mind and character as help to make intelligent and useful citizens are offered in all its departments, while the students are kept in sympathy with the callings of the people.

Second, it teaches the sciences applied to the various industries of farm, shop, and home. Chemistry, botany, entomology, zoology, and mechanics are made prominent means of education to quick observation and accurate judgment. Careful study of the minerals, plants, and animals themselves illustrates and fixes the daily lessons. At the same time, lessons in agriculture, horticulture, and household economy show the application of science; and all are enforced by actual experiment.

Third, it trains in the elements of the arts themselves, and imparts such skill as to make the hands ready instruments of thoughtful brains. The drill of the shops, gardens, farm, and household departments is made a part of a general education to usefulness, and insures a means of living to all who make good use of it. At the same time, it preserves habits of industry and manual exertion, and cultivates a taste for rural and domestic pursuits.

Fourth, it strives to increase our experimental knowledge of agriculture and horticulture. The provision for extensive and accurate researches made by establishing the Experiment Station as a distinct department of the College offers assurance of more definite results than can be obtained by ordinary methods. The Professors of Agriculture, Horticulture, Chemistry, Botany, and Veterinary Science, together with the President of the College, form the Experiment Station Council, by authority of which experiments are undertaken and carried on in the several departments, under the special supervision of the Professors. These touch "the physiology of plants and animals; the diseases to which they are severally subject, with remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and waters; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable."

The bulletins of the Station, issued at least as often as once in three months, are sent, according to law, free of postage, to all newspapers in the State, and "to such individuals actually engaged in farming as may request the same, and as far as the means of the Station will permit." Correspondence with reference to bulletins and experiments is welcomed, and may be addressed to the several members of the Council.

Fifth, it seeks to extend the influence of knowledge in practical affairs beyond the College itself. For this purpose it publishes the weekly *INDUSTRIALIST*. Its officers also share in the debates and consultations of farmers and horticulturists throughout the State. Each winter a series of ten Farmers' Institutes is held in as many different Counties of the State. In these, the Faculty share with the people in lectures, essays, and discussions upon topics of most interest to farmers.

These institutes have brought the College into more direct sympathy with the people and their work, so as to make possible a more general dissemination of the truths presented; and permanent organizations for the same purpose in many Counties are increasing. Correspondence upon such questions is invited by all members of the Faculty, and applications for institutes are desired from all parts of the State.

BUSINESS DIRECTIONS.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer, in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. Applications for extension of time on land contracts should be sent to the Secretary of the Board of Regents, at Manhattan.

The *INDUSTRIALIST* may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Kellerman, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study or work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

Applications for Farmers' Institutes should be addressed, as early in the season as possible, to the President.

The Experiment Station be addressed through the Secretary of the Council.

EXAMINATIONS.

Examinations for admission are held at the beginning of each term, as laid down in the Calendar of the College year. Applicants, to enter at any time during the term, shall have special examinations. These examinations are chiefly written, and a standing of 70 per cent is required to pass any study.

Examinations in the course are held as arranged by the Faculty. The results of these examinations are marked on a scale of 100, and combined with the average for daily exercise upon the same scale into a grade for report to the Secretary. But any student not present at three-fourths, at least, of the class exercises receives, at such time as the teacher may name, a more extensive examination than the general one; and this examination alone decides the grade.

Averages of grades in the register are made by giving the final grade a value of two-thirds and previous grades a value of one-third. After each term examination during the first year of attendance, a report of advancement is made to parents; and any student upon leaving College at the close of a term, may receive a certificate of standing.

The final grade and term average must be at least 70 for passing any study; and any student who fails to pass in two studies of the course may drop back a year or withdraw from College.

After completing the studies of the first year, students are allowed special examination only upon recommendation of the Professor in charge, and by permission of the Faculty. Permission for examination in studies not pursued with a class must be obtained at least two months before the examination is held. All such examinations are held under the immediate supervision of the Professor in charge, and are thorough and exhaustive.

CALENDAR.

1890-91.
Fall Term—September 11th to December 19th.
Winter Term—January 6th to March 27th.
Spring Term—March 30th to June 10th.
June 10th, Commencement.
1891-92.

Fall Term—September 10th to December 18th.

TO SCHOOL OFFICERS.

The College Loan Commissioner has funds to invest in school district bonds *at par*. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioners and the State Agricultural College. Address T. P. Moore, Loan Commissioner, Holton, Kan.

LOCAL MATTERS.

The wheat is all safely housed in the barn.

If you contemplate a college course, send for a Catalogue.

Miss Jennie Tunnell took advantage of cheap rates to spend a week in St. Louis.

With this issue, the INDUSTRIALIST bids its readers good-bye until the middle of August.

Mrs. Kellerman and children are in Ohio, where they will spend the summer with relatives.

Prof. Failyer was called to Whiting the first of the week as expert witness in a liquor case.

Mr. and Mrs. Willard entertained a few friends on Friday evening of last week in a tea party.

The effect of the heat of the past few days is plainly seen on the lawns, the grass being badly "fired" in spots.

The Library has increased 901 volumes during the year. The total bound volumes number 9,826; pamphlets, 3,150.

Regent Hessian is in Washington County, Pa., to attend a reunion of alumni of Washington and Jefferson College.

Prof. Kellerman lectured before the teachers at the Christian Church on Tuesday evening. His subject was "Protoplasm."

Bulletin No. 10, entitled "Notes on Conifers, for Kansas Planters," from the pen of Prof. Popeno, is in press, and will be issued next week.

Prof. Lantz left on Thursday for a visit to his old home in Pennsylvania. He expects to make a few side trips to the sea-shore and some of the larger cities.

A letter from President Fairchild, under date of Mount Vernon, O., June 23rd, states that he is called to Washington to attend a meeting of the Committee on Legislation for Agricultural Colleges.

Many interesting notes in connection with Commencement exercises were crowded out, chief among which were notices of the work displayed in the Drawing, Entomological, Botanical, Mechanical, Sewing, and Printing Departments, all of which attracted many visitors.

This issue of the INDUSTRIALIST consists of twenty thousand copies, which will be distributed throughout the State for advertising purposes. If any of our readers have friends who may be interested, they are invited to send names and addresses, when sample copies will be sent them.

Prof. Georgeson visited Gen. Stone's farm, near Leavenworth, on Tuesday, to witness the workings of a new cream separator, the construction and operation of which was so fully described by the Professor in the INDUSTRIALIST of recent date. The machine extracted thirty-one pounds of butter from 679 pounds of sweet milk in thirty-seven minutes. Prof. Georgeson pronounces the separator a great success, and thinks it will revolutionize butter-making.

The following students are employed at intervals during vacation: Executive Department, Ada Rice, E. R. Burtis; Farm, J. E. Dorman, J. F. Odle, F. C. Burtis, W. W. Hutto, V. O. Armour, S. J. Clarke, W. D. Morrison; Horticultural, F. A. Waugh, S. Van Blarcom, C. P. Hartley, G.

L. Clothier, R. L. Wallis, G. K. Thompson, G. T. Morrison; Botanical, Bessie Little, C. H. Thompson; Chemical, A. E. Campbell; Printing, K. C. Davis, Christine Corlett, D. C. McDowell, H. V. Rudy.

Small fruits are yielding somewhat more than an average crop. Of the raspberries, the Souhegan and the Mammoth Cluster are the most productive this season, there being a full crop of each, and the berries are of good quality. The late rains did much toward increasing both yield and quality. The red varieties are all short, due, perhaps, to the severe winter. Our Early Harvest blackberries have broken the local record, having ripened on the 18th of June, yielding a full crop. There is also a good yield of gooseberries and currants.

GRADUATES AND FORMER STUDENTS.

Miss Anna M. Shipman, of Elmdale, student in 1888-9, is visiting her sister, Mrs. Breese.

Miss Bertha Kimball, '90, entertained a party of student friends at her home on College hill last Friday evening, in honor of her friend Miss Parsons, of Salina.

Miss Florence J. Brous, '84, is employed for a short time in the Library. Miss Julia Pearce and F. A. Campbell, '90, are also engaged in work at the College for a short time.

Miss Mattie Cobb, '88, writes from Wagoner, I. T., of Commencement exercises at Lester Seminary, Holden, Mo., where she has just closed a year's teaching, and concludes: "I wish some of you College people could have been present. My year of work there was very pleasant."

Following closely on the festivities of Commencement week, and the parting of friend with friend, comes a dispatch conveying notice of the death of Thomas E. Wimer, of the Class of 1890. The telegram gave no particulars, simply stating that death occurred at nine o'clock on Friday morning, June 27th, at his father's home, Wayne, Republic County. Mr. Wimer's ill health for the last few months of his stay at College interfered to some extent with his studies, but at the close of his work here he appeared in good health and spirits, and took an active part in the closing exercises. The young man was a prime favorite with both his classmates and teachers, and the news of his sudden death is received by them, and by all who knew him, with profound sorrow.

COLLEGE LIVE-STOCK FOR SALE.

We call the attention of our readers to the fact that the Board of Regents of the College have authorized the sale of a number of Shorthorns and Jerseys from the College herd, which is deemed too large for the means of maintenance and the needs of the institution, numbering, as it does, upwards of 50 head. Among the Shorthorns offered for sale are thirteen cows and heifers, all fine specimens of the breed, that will prove valuable acquisitions to any herd. Here is a chance of getting some good foundation stock which breeders and admirers of good Shorthorns should not fail to improve. They will be sold at reasonable prices considering their breeding and individual merit. The cows have all been bred to Scottish Chief 89317, one of the finest Cruickshank bulls in the State, and the heifers offered are of his get. Several of the young cows are by the fine imported Cruickshank bull Thistle-top 83876, now in Colonel Harris's herd, Linwood, Kansas.

Among the Jerseys are several young cows, now getting into the prime of life, all of Herd-Book stock, which will be sold for \$75.00 each.

Persons who contemplate buying are cordially invited to visit the College and inspect the herd; and correspondence on the subject is solicited by the Professor of Agriculture, who will furnish all desired information in regard to prices and pedigrees.

SPECIAL NOTICE TO KANSAS TEACHERS.

The attention of County and City Superintendents, and of Kansas teachers generally, is invited to an important change which has been made in the terms upon which applicants may be admitted to this College.

By recent action of the Faculty, the following diplomas and certificates will be received in lieu of the required entrance examinations:—

1. Diplomas received on the completion of a County Course of Study which has been approved by the Faculty, when properly signed by the County Superintendent.

2. Certificates of passing the grammar grade in any city with course of study approved by the Faculty, when properly signed by the City Superintendent.

3. Kansas teachers' certificates issued by the County Board of Examiners.

Under the first of these provisions, County graduates will be admitted from the following Counties:—

Anderson, Allen, Butler, Brown, Bourbon, Barber, Clay, Cowley, Chase, Cherokee, Cloud, Doniphan, Dickinson, Elk, Greenwood, Geary, Harvey, Harper, Jackson, Johnson, Jefferson, Kingman, Leavenworth, Linn, Mitchell, Marion, Montgomery, McPherson, Neosho, Nemaha, Osborne, Ottawa, Osage, Riley, Rooks, Republic, Rice, Rush, Reno, Sumner, Shawnee, Washington, Woodson, Wilson, Wyandotte.

Other Counties may be added to this list as fuller information is placed in the hands of the Faculty.

Certificates of passing the grammar grade in the following cities will be accepted: Abilene, Atchison, Arkansas City, Anthony, Augusta, Beloit, Burlington, Clay Center, Concordia, Chanute, Caldwell, Cherryvale, Coffeyville, Chetopa, Eureka, El Dorado, Emporia, Ft. Scott, Girard, Great Bend, Horton, Holton, Hiawatha, Great Bend, Hutchinson, Independence, Junction City, Kansas City, Kingman, Larned, Lyons, Lawrence, Leavenworth, Manhattan, Minneapolis, McPherson, Newton, Osage City, Olathe, Oswego, Osborne, Ottawa, Paola, Parsons, Salina, Solomon City, Seneca, Topeka, Wichita, Winfield, Wellington, Washington. Additions to this list will be published as may become necessary.

TERMS OF ADMISSION.

Applicants for admission at the beginning of the College year must be at least fourteen years of age, and able to pass satisfactory examination in reading, spelling, writing, arithmetic through percentage and interest, geography, and elements of English grammar. Those applying later in the year must show sufficient advancement to enter the classes already in progress. Every effort should be made to begin with the first day of the term, in order to advance with classes from the first.

The following diplomas and certificates will be received in lieu of entrance examinations:—

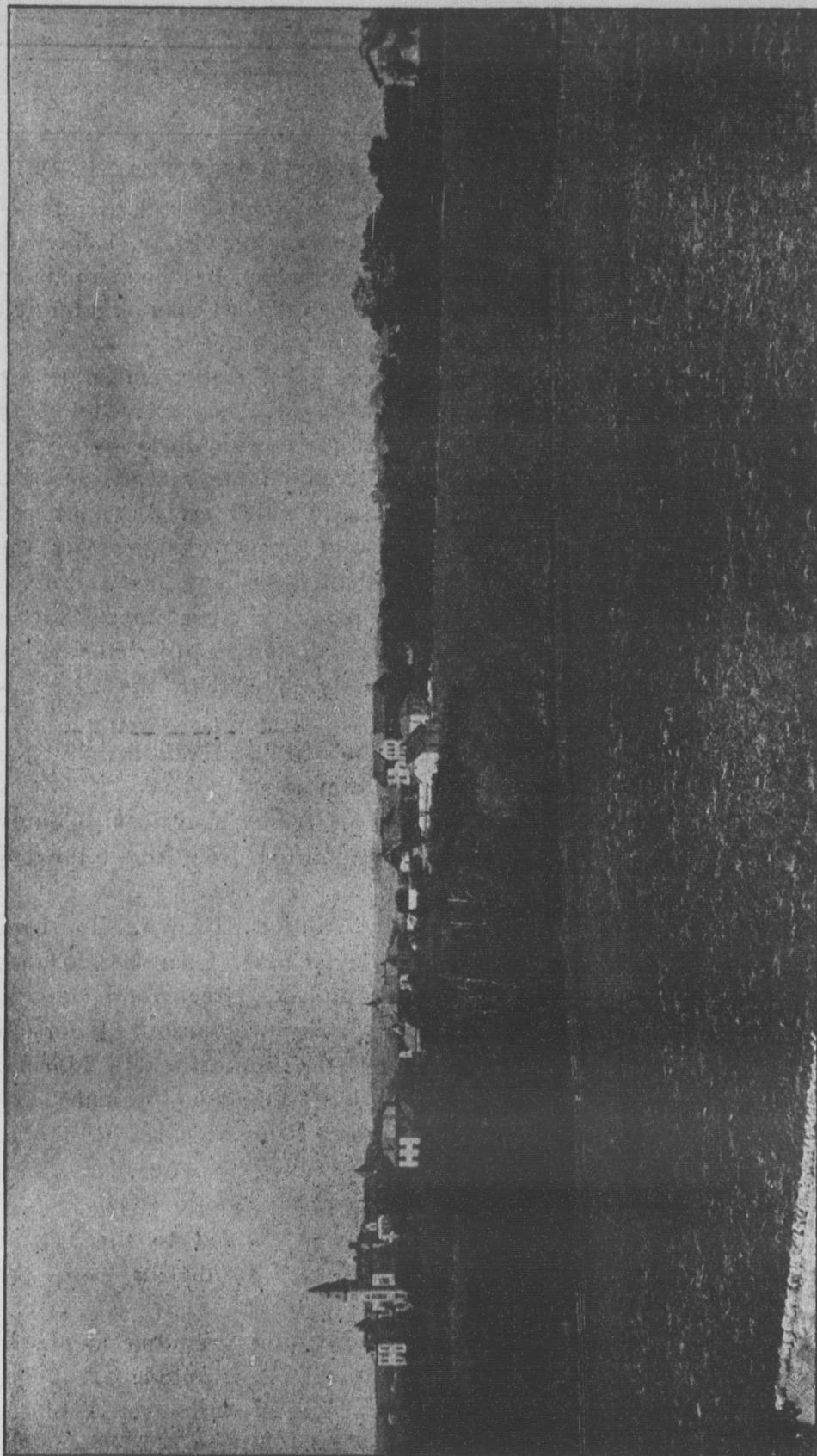
1st. Diplomas received on the completion of a county course of study which has been approved by the Faculty, when properly signed by County Superintendent.

2nd. Certificates of passing the grammar grade in any city school with a course of study approved by the Faculty, when properly signed by the City Superintendent.

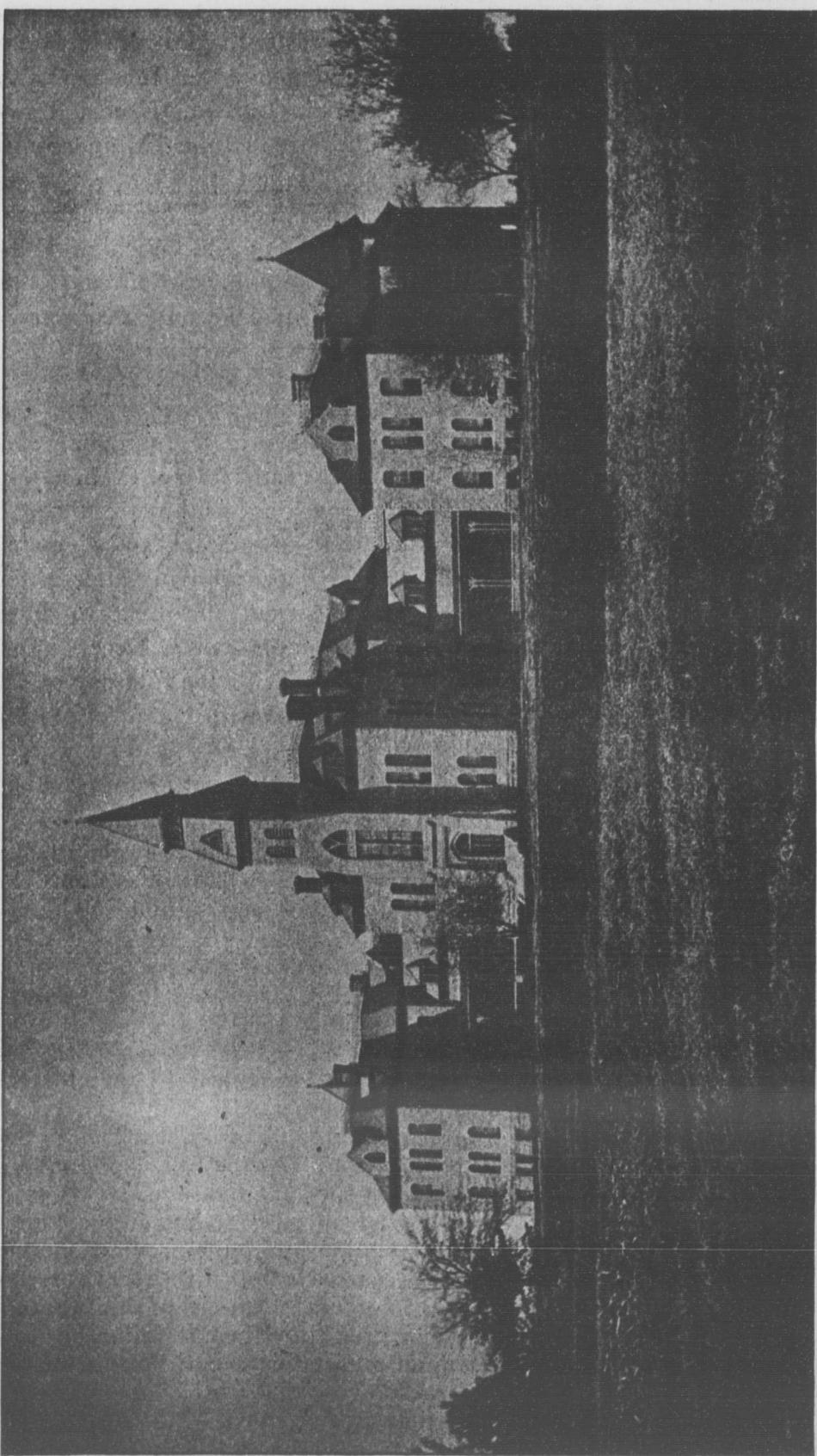
3rd. Kansas teachers' certificates issued by the County Board of Examiners.

Applicants of mature age who, for lack of advantages, are unable to pass the full examination, may be received on special conditions.

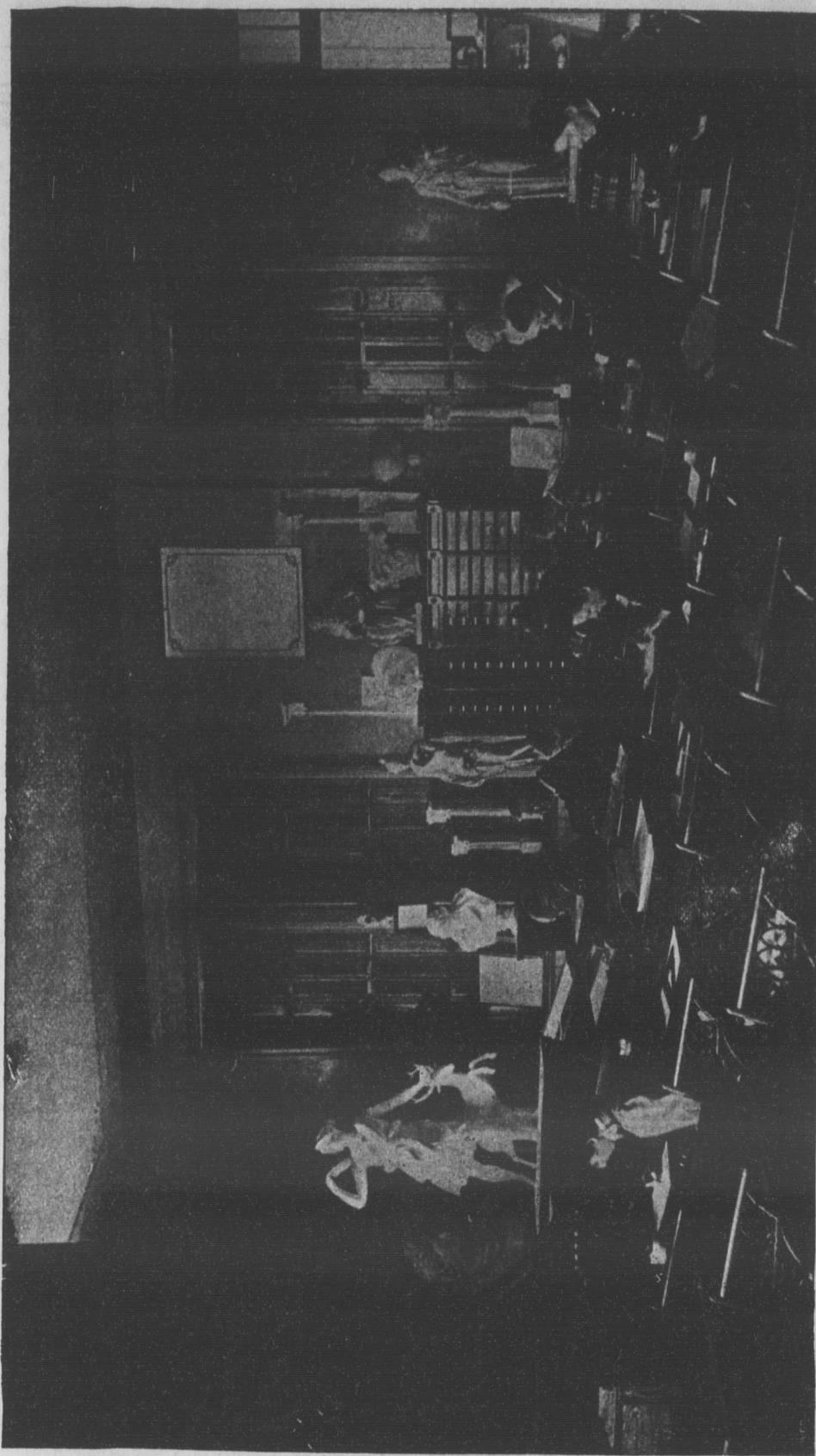
Applicants for advanced standing in the course must pass examination in all the previous studies of the class to be entered; but if they have pursued such studies in other institutions of similar rank, they may receive credit for their standing in those institutions upon presenting a certificate from the proper officer, showing that their course has been equivalent to that given here.



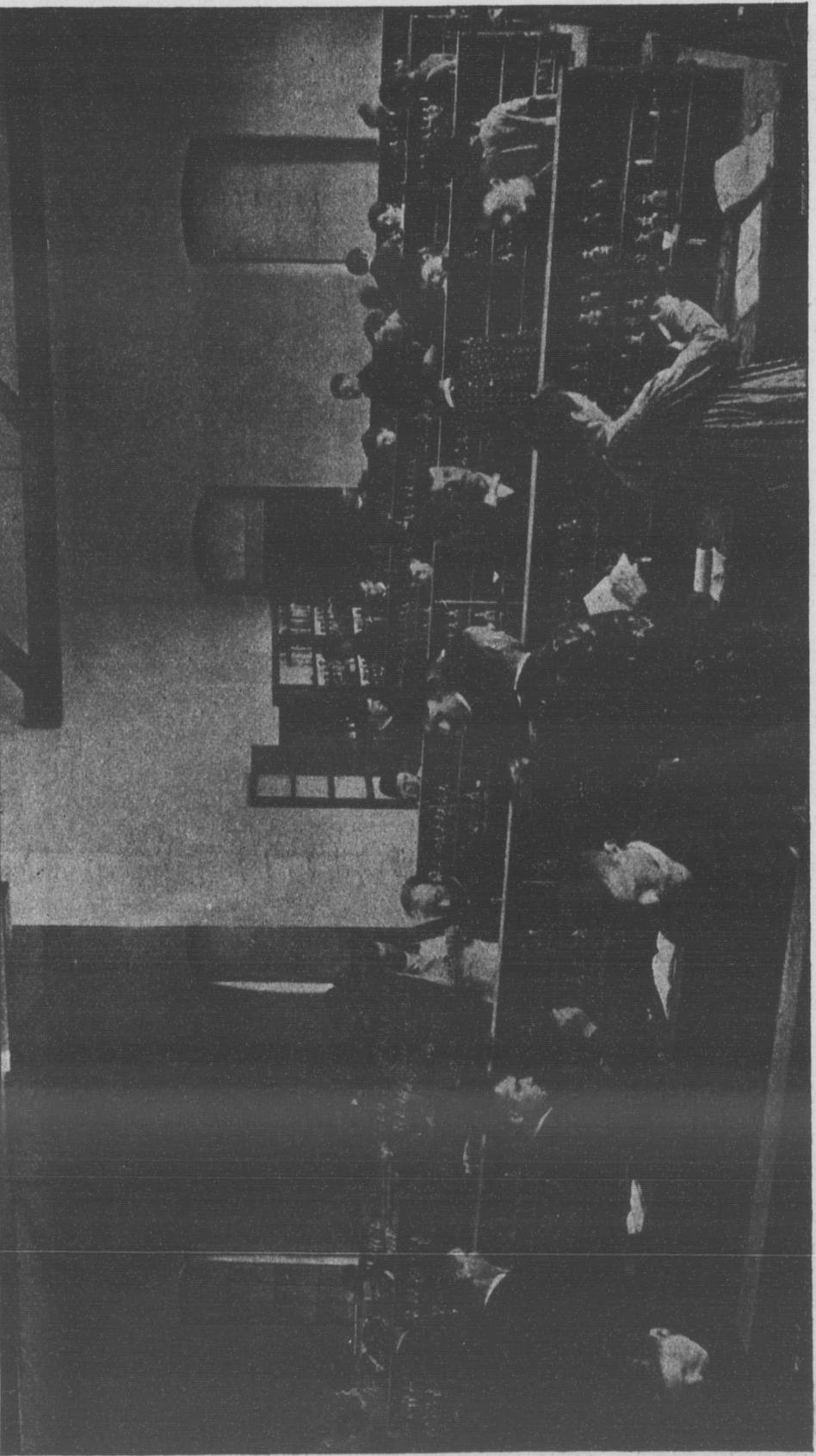
KANSAS STATE AGRICULTURAL COLLEGE—MAIN BUILDING.



KANSAS STATE AGRICULTURAL COLLEGE—GENERAL VIEW.



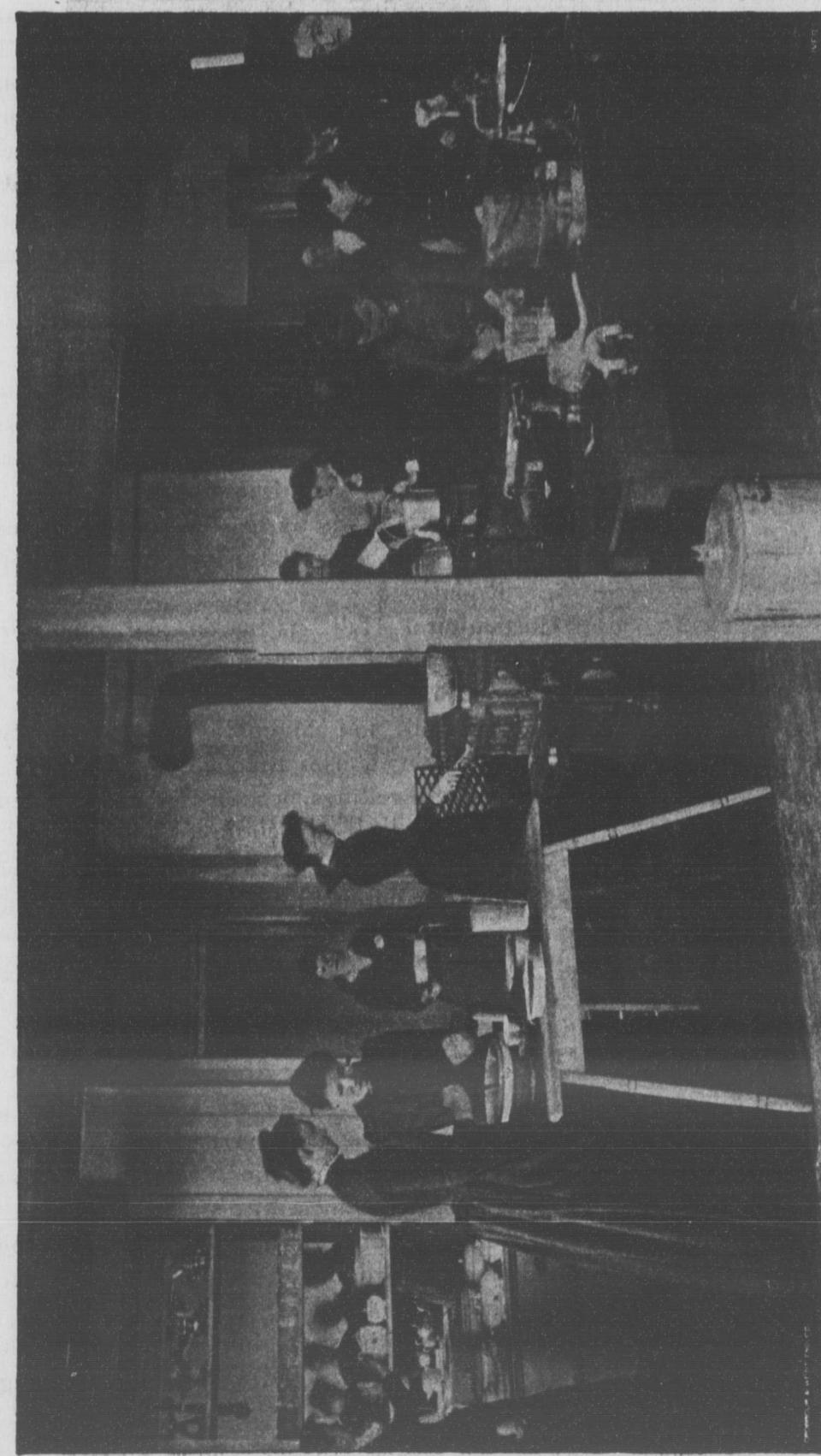
KANSAS STATE AGRICULTURAL COLLEGE—DRAWING ROOM.



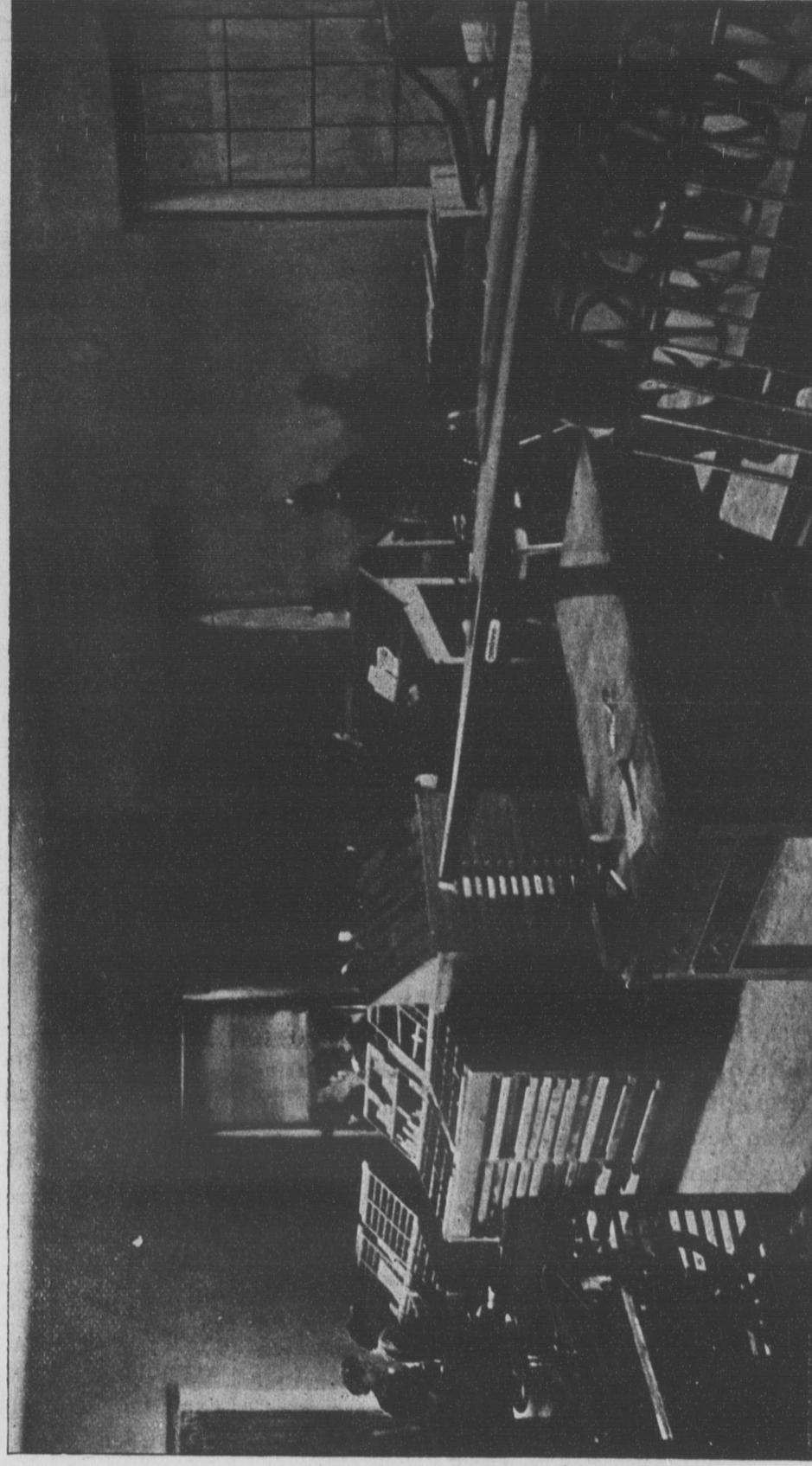
KANSAS STATE AGRICULTURAL COLLEGE—CHEMICAL LABORATORY.



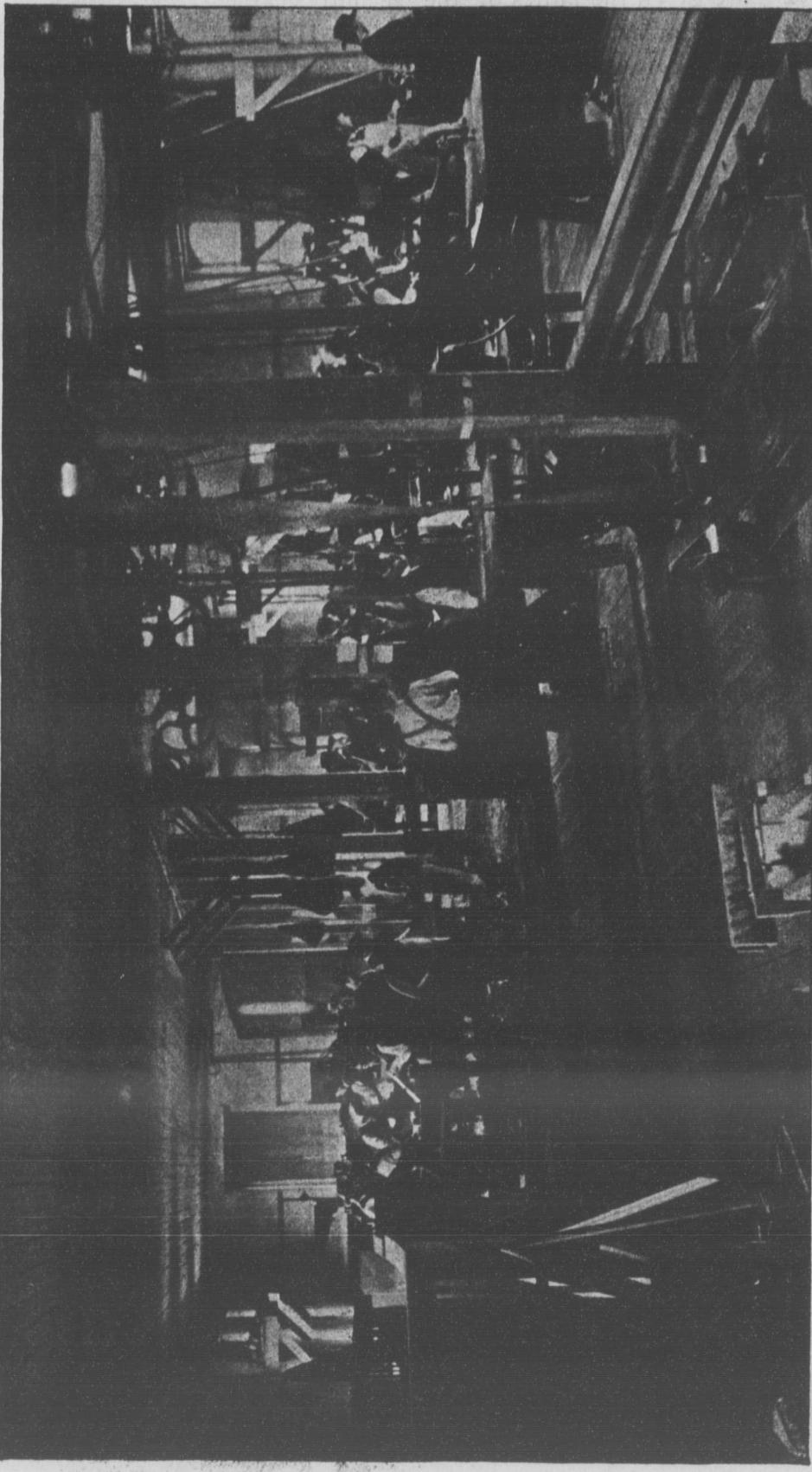
KANSAS STATE AGRICULTURAL COLLEGE—KITCHEN LABORATORY.



KANSAS STATE AGRICULTURAL COLLEGE—SEWING ROOM.



KANSAS STATE AGRICULTURAL COLLEGE—CARPENTER SHOP.



KANSAS STATE AGRICULTURAL COLLEGE—PRINTING OFFICE.

INDUSTRIAL ARTS.

The training in these departments is designed to be systematic and complete in each, so that the student, following a single line diligently through the four-years' course, gains the essentials of a trade and a reasonable degree of skill. Those who wish only a general acquaintance with the arts can take shorter courses in several of them; but all are to select with a definite purpose. In the established course, young men are required to take the regular term in the carpenter shop, and on the farm and gardens, whatever the industrial chosen; young women are required to give one term to sewing, one to practice in the kitchen laboratory, and one in the dairy.

AGRICULTURE AND HORTICULTURE are required of young men as industrials during one term of the second year and one term of the third year. In these, practice is made to illustrate and emphasize the teaching, and cover essentially the same ground.

COOKING.—During the winter term, the young ladies who have lectures on Household Economy are required to cook one hour each day. They are taught various methods of making the substantial articles of food, as well as allowed to spend some time on the dainty dishes. During the term, they have practice in waiting on the table, in serving guests, and in arranging for evening companies, thus putting into immediate practice the lectures of each day.

During the fall term, any students who have passed the study of Household Economy may take cooking as an industrial, in which canning fruits, making preserves, jellies, pickles, mincemeat, desserts, cake, and fancy breads form the principal part of the work.

DAIRYING.—During the spring term, daily instruction and practice in the different branches of dairying are given the ladies of the second year by the Instructor in Household Economy. Here, the regular daily work is supplemented by a short course of lectures intended to explain the best practice in the arts of butter- and cheese-making, and to give the reasons therefor. The following topics cover, in the main, the instruction given the class: Influences affecting the quality and quantity of milk; butter-making; creameries; "deep" and "shallow" setting systems; packing and preserving butter; the household and factory systems of cheese-making.

CARPENTRY.—Wood-work is required of all young men during one term of the first year. In the first term's work, a definite graded series of tasks is given in joining, work to dimensions, and simple problems in constructions and turning, with the proper use and care of common bench tools, through which each student is advanced according to ability. Practice is given later in general wood-work, carpentry, cabinet-making, turning, and pattern-making; and advanced students may have work suited to their chosen line, with special problems of construction, and special training in the use and care of fine tools, including saw-filing. All work during industrial hours is laid out by the Superintendent, and belongs to the shop, except the fourth-year students are allowed to work from drawings of their own upon articles for their own use or profit. All students may be allowed the use of the shop outside of the practice hours, for work of their own, under direction of the Superintendent.

In iron-work, instruction is given in ordinary work—forging, filing, tempering, etc.

SEWING.—One term of sewing is required before the completion of the first year of study. During this term, the work is carefully laid out by the Superintendent in a series of lessons, graded to the capabilities of each student. To more advanced students, all ordinary forms of sewing with needle and machine are taught; and any

student may furnish material, and work for her own advantage under direction of the Superintendent. Cutting and fitting by a straight-line system are taught, and the systems are furnished at wholesale rates. Fancy needle-work and knitting may be taken at certain stages of the course.

PRINTING.—Two courses are pursued in this art. In one, the student is taught the use of the implements or tools used in typography; composition and imposition; correcting proof; technical terms; presses and their workings; and the general duties of a first-class workman. The other course of lessons embraces instruction in spelling, capitalization, syllabication, punctuation, proof-reading, and such other work as will make the student accurate and expert. Wilson's Punctuation is the text-book; but much of the instruction is oral, such as grows out of the every-day experience of the office.

Admirable drill is furnished by the INDUSTRIALIST to all, but especially to those who take the full course. The printing which the Departments of the College require gives to the advanced student a fair knowledge of the principles and practice of job-work.

TELEGRAPHY.—The course of training involves for beginners the characters that compose the alphabet, and combinations of these characters into words and sentences,—attention being paid to spelling and to short and precise expression in messages,—abbreviations, signals, forms of messages, train orders, reports, etc. To the more advanced is given regular line business,—as press reports, messages, cipher messages, and orders in all forms used by prominent telegraph companies, together with the necessary book-keeping, upon exact copies of blanks in actual use, thus giving the student an understanding of the work of an operator. A portion of the time is devoted to instruction in the use and management of lines, batteries, instruments, etc.

INSTRUMENTAL MUSIC.—Provision is made for giving instruction on the piano, organ, orchestral, and band instruments. A full course upon the organ or piano extends over four years, including harmony and composition; but students may take lessons for a single term if they choose. The College furnishes the pianos and organs for daily practice, but the instruction is paid for at the usual rate, as given under "Expenses." Music may be the industrial for young women, unless some other is required in the course. Young men may take music in addition to their course, if able to keep up standing in classes.

Opportunity is given for students who are sufficiently advanced to join in the weekly rehearsals of the College Orchestra.

LABOR AND EARNINGS.

Every encouragement is given to habits of daily manual labor during the College course. Only one hour of daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their abilities and means.

All labor at the College is under the direction of the Superintendents of the departments, and offers opportunity for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed.

The shops and offices are opened afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere, the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed —outside of required hours of labor—upon work

for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates varying with services rendered, from eight to ten cents an hour. The Superintendents strive to adjust their work to the necessities of students, and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay-roll for the past year ranges from \$250 to \$400.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. In these ways, a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term time, or from other sources, for the larger part of their expenses. The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

GROUNDS AND BUILDINGS.

The College grounds and buildings, occupying an elevation at the western limits of Manhattan, and facing towards the city, are beautiful in location. The grounds include an irregular plot in the midst of a fine farm, with orchard, vineyard, and sample gardens attached. The grounds are tastefully laid out and extensively planted according to the design of a professional landscape gardener, while well-graveled drives and good walks lead to the various buildings. All of these are of the famed Manhattan limestone, of simple but neat styles of architecture, and admirably suited to their use. All recitation rooms are excellently lighted and ventilated, and all are heated by steam or hot water. The buildings stand as indicated in the plot accompanying the following description:

College, 152 by 250 feet in extreme dimensions, arranged in three distinct structures, with connecting corridors. This building, contains in its two stories and basement, offices, reception room, cloak-rooms, studies, chapel, library, reading-room, kitchen laboratory and dairy, sewing-room, society-rooms, telegraph office, and twelve classrooms.

Chemical Laboratory, one story, 26 by 99 and 46 by 75 feet of floor space, in form of a cross. It contains eight rooms, occupied by the Department of Chemistry and Mineralogy.

Mechanics' Hall, 39 by 103 feet, of two stories, occupied by Carpenter Shop, Printing Office, and Music Rooms.

Horticultural Hall, 32 by 80 feet, one story and cellar, having cabinet-room, class-room, and storage, with green-house attached.

Horticultural and Entomological Laboratory, with propagating houses attached.

Two stone dwellings, occupied by the President and the Professor of Agriculture.

Museum Building, 46 by 96 feet, and two stories. This building, which has served many purposes, is now fitted for an armory, drill-room, and veterinary laboratory below, and for classroom and laboratory for Department of Botany above.

The Farm Barn is a double but connected stone structure, 50 by 75 feet, with an annex 48 by 96 feet. A basement, having stables for seventy-five head of cattle, silos, engine-room, and granaries, underlies the entire structure.

The Horticultural Barn is a stone building, containing store-room, granery, and stables for several horses.

The blacksmith shop, lumber house, implement house, piggery, and various out-buildings are of wood.

MECHANICAL DEPARTMENT.

In the Shop, the Mechanical Department gives instruction to all young men in wood-work, by a graded course of exercises as nearly as may be in accordance with manual training ideas. On the completion of this graded course, work in various lines may be given, according to the proficiency of the student. The usual course is one of general wood-work, the practice being as largely on practical work as a crowded shop will allow. For this general wood-work, the shop is well equipped with machine tools, as well as hand tools. A list of these tools includes the three illustrated here, namely, a

Double-Column Circular Saw, of J. A. Fay & Co., Cincinnati.
Twenty-four-inch Pony Planer, of Dietz, Woerman, & Co., Cincinnati.
Single Spindle Friezer, or Edge-Moulder, of Cordesman, Meyer, & Co., Cincinnati.

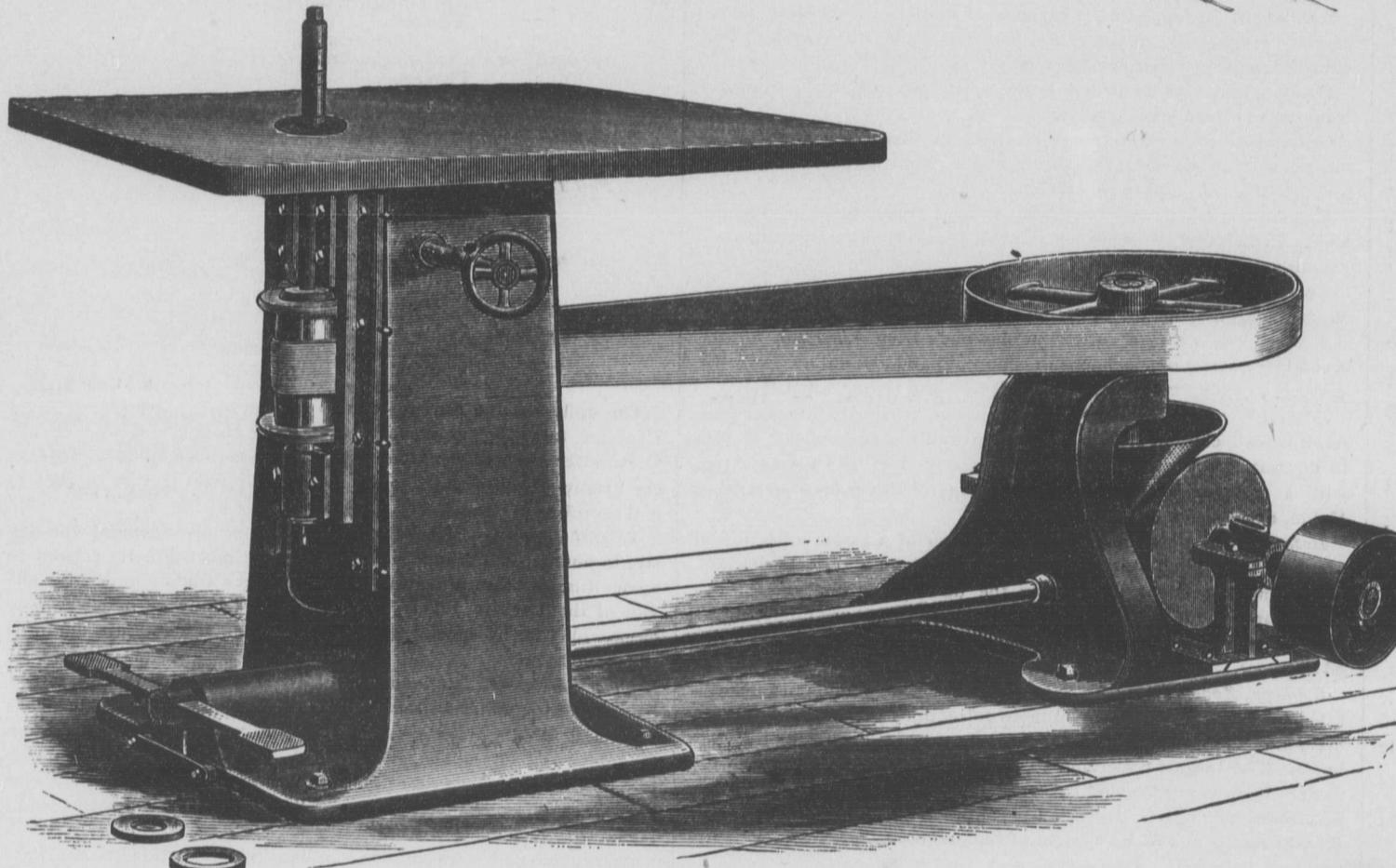
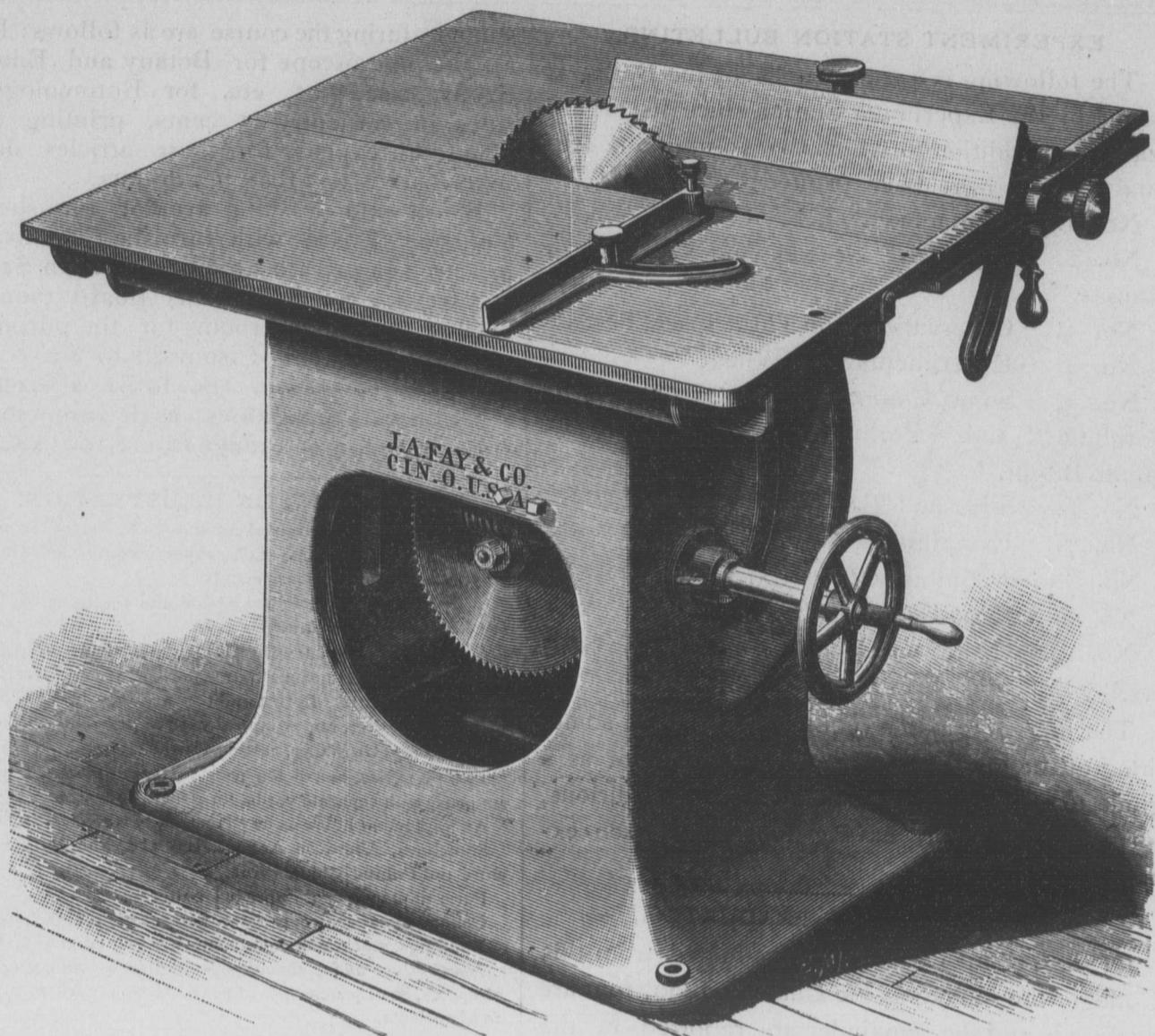
And in addition a

Thirty-four-inch Band Saw of Dietz, Woerman, & Co.
Twenty-inch Swing Lathe, sixteen feet long, Dietz, Woerman, & Co.
Nine-inch, four-foot bed, Turning Lathe of Rose Polytechnic Shops.
Nine-inch, three-foot bed, Bench Lathe of Rose Polytechnic Shops.
Nine-inch, four-foot bed, Bench Lathe of Worcester Technological Shops.
Nine-inch Barnes Foot Power Lathe.
Seven-inch Battle Creek M'fg. Co. Lathe.
Foot-power Mortiser.
Eight-inch Double Emery Grinder of Springfield Emery Co.
Power-Mounted Grind Stone.

These run by a ten-horse power engine of the Atlas type.

These tools are all good tools of their class; and, in a great many cases, give students their first opportunity to carefully investigate a well-built modern machine. The circular saw shown in the cut is specially attractive. Its design and adjustments are unique, and in every way excellent, and the construction is the best used in that class of machine tools. It consists of a hollow columnar frame cast in one piece, its form making a very rigid frame for the attachment of other parts. An oblong rectangular frame holding a saw mandrel journaled across each narrow end is hung in the column in such manner as to swing about an axis mid way between the two saw mandrels, and parallel to both. By this means either saw mandrel may be brought uppermost, bringing either sixteen-inch saw above the table at any desired height by a nice adjustment. The frame holding the saw mandrels is revolved at will by means of a worm-gear and worm, actuated by the hand wheel shown in the front of the machine. The table, 44x36 inches, is in two pieces, the left hand part being capable of movement across the mandrels, and arranged for cutting off work at any angle. The right hand part of the table holds a ripping fence which is adjustable from the saw for any width.

This fence has two other adjustments: its face set at any angle with the table, for



ripping beveled edges; and its direction set at an angle with the saw, whereby a widened elliptical kerf is cut by the saw, instead of its usual narrow rectangular kerf. These adjustments, together with that which makes it possible to tip the whole table up to an angle of forty-five degrees with the saw, make every kind of beveled and angular work possible. The belt, taken from a floor-hanger, is brought around both saw mandrels, and over weighted idler pulleys, which keep the belt tight in any position of the swinging saw frame. A steel head capable of holding cutters up to one and one-half inches wide, can replace one of the saws, the parts of the table separating to widen the gap. In this way the tool becomes efficient for plowing, dadoing, and sticking moulding of almost any form.

In selecting this tool, it was thought to be more efficient for the uses to which it was to be put than any other design; and the makers, J. A. Fay & Co., of Cincinnati, have built their world-wide reputation on the manufacture of just such excellent tools for every line of wood-working.

The Planer of Dietz, Woerman, & Co. is an efficient tool, and is capable of taking twenty-four inches wide and six inches thick.

It has planed material to an even thickness of .015 of an inch, which speaks well for the arrangement of its adjustments.

The main frame, carrying the bearings of the cylinder, is a heavy rectangular column which is formed to guide the usual adjustable table, having a six-inch vertical adjustment, controlled by elevating screws connected with the hand wheel shown at the side. The cylinder is rectangular between the bearings and carries two cutters. The feed rolls each side of the cylinder are run by a small separate feed belt and a train of gearing, furnishing a positive feed.

The Single Spindle Friezer of the Cordesman, Meyer, & Co., consists of a hollow column, surmounted by a 30x36 inch table. A vertical spindle has bearings in a frame which has vertical adjustment of six inches in guides, which are part of the heavy column. This adjustment is controlled by an elevating screw controlled by a hand wheel. The spindle, run by a horizontal belt, projects through a circular opening in the table, and by washers and a nut is adapted to receive moulding cutters of any description. The spindle can be run in either direction, and is under instant control for stopping or reversing by the treadle shown at the base of the column. The floor hanger consists of a horizontal shaft on which are rigidly fastened two paper friction cones. Between these hangs a third cone on the end of a vertical shaft carrying a pulley from which the horizontal belt runs. The frame carrying the horizontal shaft is capable of a slight horizontal movement controlled by a lever on the end of the treadle shaft. A reverse motion is given to the vertical shaft by throwing either cone in contact with a side of the vertical cone, running it by friction, or it is stopped by throwing the frame so that neither cone touches. Although extremely simple, this tool has a wonderful range of usefulness, and is well suited to the work of the shop.

A GOOD EDUCATION PAYS.

1. In dollars and cents. All testimony of statistics agree in showing that educated laborers, of all ranks, have better work and better wages than the uneducated.
2. In influence and position. Careful estimates make it certain that the chances of promotion to places of trust and power among men are almost two hundred times as great to an educated man as to an uneducated.
3. In usefulness. The bulk of good work in the world—discovery, invention, government, philanthropy, and religion—is brought about by those who learn to think by study.
4. In enjoyment. Our pleasures grow out of what we are ourselves more than from surroundings. A well-trained man sees, hears, and handles a great deal more of the world than an untrained one. All things do him good, not so much because he owns them as because he understands them. He always has good things to think about.

It may be worthy of remark that the Kansas Agricultural College has a larger attendance than any other similar institution in the United States, the number for the year just closed being over five hundred; and those who have personal reasons for being partial to the College claim that it is the best of its kind in America. But a Colorado man should not say too much in such a strain, else his loyalty to home institutions might be questioned.—*Colorado Farmer*.

The Mechanical Department has received an inspector's test pump and appliances wherewith the readings of pressure gauges may be corrected. The Department offers to test and furnish a corrected reading free of charge to anyone who will send gauge, express prepaid. They should be sent to the Superintendent of the Department.



THE INDUSTRIALIST.

EXPERIMENT STATION BULLETINS.

The following is a complete list of the Bulletins issued by the Experiment Station since its organization, in addition to which two voluminous Annual Reports have been printed:—

- No. 1. "Announcement."
- No. 2. "Cultivated Grasses and Clovers in Kansas."
- No. 3. "Observations on Three Insect Pests."
- No. 4. "Experiments with Wheat."
- No. 5. "Some Comparisons of Varieties of Sorghum," and "Preliminary Report on Sorghum Blight."
- No. 6. "Silos and Ensilage."
- No. 7. "Experiments with Wheat."
- No. 8. "Preliminary Report on Smut in Oats."
- No. 9. "Experiments in Pig-feeding."
- No. 10. "Notes on Conifers for Kansas Planters."

The foregoing list is published to show something of the range of topics treated, and not as a guide to intending correspondents, the editions, for the most part, having long since been exhausted.

OCCUPATIONS OF GRADUATES.

Of the 138 men who have graduated from this College, not including the Class of 1890, four are deceased, and the remainder are reported in the following occupations: Farmers, 25; fruit-growers and nurserymen, 4; stock-raisers, 3; assistants in Agricultural Experiment Stations, 4; assistants in United States Department of Agriculture, 2; teachers and students of special courses, 9; veterinary surgeon, 1; editor of agricultural paper, 1; mechanics, 6; civil, electrical, and mechanical engineers, 9; contractors and builders, 2; architects and draughtsmen, 3; general business men, 22; printers, 4; superintendents of public schools, 5; teachers in public schools, 11; students in other institutions, 5; officers in Army, 2; observer in Signal Service, 1; physicians and students of medicine, 4; dentist, 1; editors, 4; ministers, 4; lawyers and students of law, 14. Total, 146; in two occupations, 12.

Of the 67 women, three are deceased, and the remainder are occupied as follows: Housewives, 29; at home, 5; teachers in public schools, 15; teachers and students of special sciences, 6; teachers of music, 3; teacher of art, 1; clerks or stenographers, 2; printer, 1; milliner and dressmaker, 1; assistant librarian, 1. Total, 64.

EXPENSES.

Tuition is free, and no general fee for incidental or contingent expenses is charged. In a few special departments of instruction, the following payments are made in advance to the Secretary:—

In the term of Analytical Chemistry, students pay \$3 for the chemicals and apparatus used in their laboratory practice and analysis.

In the Printing Office, young men, in their first year, pay \$3 a term for office expenses. Advanced students have use of the office for the work performed during the industrial hours.

In Telegraphy, young men pay \$3 a term for office expenses.

Young women are furnished both Printing and Telegraphy free of expense, these two offices, with the Sewing and Cooking Departments, being provided especially for their industrial training.

Lessons in instrumental music—two a week—are from \$10 to \$14 a term, according to its length; one a week, \$6 to \$8.40. One-half is to be paid to the instructor in charge with the first lesson, the other half at the middle of the term.

The cost of text-books at the book stores is, for the first year, about \$4 a term; for the second year, \$2.75 a term; for the third year, \$7 a term; and for the fourth year, \$5.50 a term.

The expenses for apparatus and tools to each

student during the course are as follows: Drawing, \$3.50; microscope for Botany and Entomology, \$1.50; case, pins, etc., for Entomology, \$2.25; rules in carpentry 25 cents, printing 25 cents. The total expense for these articles during the four years is less than ten dollars.

Board and washing are not furnished by the College. Board with furnished rooms, can be procured in private families at from \$2.75 to \$4 per week. Some students board themselves at even less cost; and rooms for the purpose can be obtained at a rent of from \$1 to \$3.50 a month. Washing costs from 50c. to \$1 a dozen pieces. Ordinary expenditures, aside from clothing and traveling expenses, range from \$100 to \$200 a year.

MEANS OF ILLUSTRATION.

Agriculture.—Two farms of 215 and 100 acres, for the most part surrounded by durable stone walls, subdivided into fields of variable size to suit the system of management.

A large variety of standard grains and forage crops in cultivation in fields and experimental plots.

A barn 50 by 75 feet, expressly arranged for experimental uses; and connected with it a general-purpose barn, 48 by 90 feet, for grain, hay, horses, and cattle. Both buildings are of stone, and are provided with steam power, and equipped with improved machinery for shell-ing, grinding, threshing, cutting for the silo, and steaming.

Two piggeries, one of ten pens for experimental uses, and one of six pens, with separate yards, for general purposes.

An implement house 22 by 50 feet, of two stories, and corn-cribs. Shorthorn, Aberdeen-Angus, Hereford, and Jersey cattle; Berk shire and Poland-China swine.

Farm implements of improved patterns.

Collections of grains, grasses, and forage plants.

Buildings, stock, and equipments are valued at \$25,000.

Horticulture and Entomology.—Orchards containing 275 varieties of apples, 80 of peaches, 50 of pears, 16 of plums, 20 of cherries, and 10 of apricots.

Small-fruit garden, with 200 varieties of small fruit, including blackberries, raspberries, gooseberries, currants, and strawberries; and vineyard, with 75 varieties of grapes.

Forest plantation of twelve acres, containing twenty varieties of from ten to fifteen years' growth.

Ornamental grounds, set with a variety of evergreens and deciduous trees. Sample rows, containing about 150 varieties of ornamental and useful shrubs and trees, labeled.

Vegetable garden, with hot-beds and cold-frames and experimental beds. Practice rows for students' budding, grafting, cultivating, and pruning.

Two well-planned and furnished greenhouses of three rooms each, stocked with a collection of native and exotic plants.

Museum, containing a collection of woods from American forests, and a large series of specimens in economic and general entomology.

Value of property, exclusive of orchards and grounds, \$11,500.

Chemistry and Mineralogy.—Eight rooms, fitted with tables and apparatus for a class of eighty students in qualitative analysis, sixteen in quantitative analysis, including necessary facilities for assaying, with a mineralogical collection and general illustrative apparatus. Value, exclusive of building, \$7,500.

Botany.—A general herbarium, consisting of a large collection of plants of the United States and other countries; a Kansas herbarium, containing specimens illustrating the distribution and variation of plants throughout the State; also twenty-one compound microscopes, three dissecting microscopes, tools, reagents, wall-charts, etc. Value at \$2,500.

Geology, Zoology, and Veterinary Science.—A general museum well fitted with cases containing valuable collections of mounted Kansas mammals and birds, with mounted skeletons of wild and domestic animals. The largest collection of Kansas fishes and molluscs in the State. Kansas reptiles and batrachians, salt-water fishes and invertebrates in alcohol. Collections of Mound-builders' and Indian relics, Kansas fossils and rocks, typical of the geological ages found in the State.

In Veterinary Science: A laboratory fitted with apparatus and re-agents, for the study of disease. A collection of charts, models, and anatomical preparations, illustrating healthy and diseased structure. Value, \$4,500.

Drawing.—Models, plaster-casts, patterns, charts, easels, and implements. Value at \$1,400.

Physics.—Physical apparatus, meteorological instruments, etc. Edelman's dynamo electric machine, with numerous accessories, sling psychrometer, and anemometer. The value of the whole is \$2,000.

Mathematics and Surveying.—Transits, compasses, levels, chains, models, etc. Valued at \$1,000.

Mechanics and Engineering.—Carpenter shop, with separate benches and tools for forty-five students in each class, besides lathes, mortising machine, circular saws, band saws, planer, friezer, boring machine, grinder, and general chest of tools for fine work. Power furnished by a ten-horse-power Atlas engine.

Shops for iron work, with forges, vises, drills, etc. Testing machine, charts, and models.

Inventory of material and apparatus in both shops, \$5,800.

Kitchen Laboratory, with ranges, cooking utensils, dining-room furnishings, dairy furniture; valued at \$1,000.

Printing.—Office, with thirty pairs of cases, large fonts of six point, eight-point, ten-point, and eleven-point Roman type; a good assortment of job type and brass rule; a Babcock cylinder press with steam power, a Gordon job press; a mitering machine, a rule curving machine, and a paper cutter. Value of equipment, \$3,500.

Telegraphy.—Office, with five miles of line, connecting twenty branch offices, and as many instruments. Inventory, \$1,000.

Sewing Rooms, with six machines, models, patterns, and cases; worth \$550.

Music Rooms, with four pianos, four organs, and other instruments; valued at \$1,500.

A Library, carefully selected and catalogued, containing over 9,000 bound volumes, and 2,500 pamphlets. A reading-room is maintained in connection with the library, where may be found on file forty-five of the leading literary, scientific, technical, and agricultural periodicals, and several hundred newspapers, including the principal daily and county papers from all parts of the State. Value of library, \$15,000.

Armory, containing one hundred and fifty stands of arms (breech-loading cadet rifles, caliber .45), with accoutrements; two three-inch rifled guns; also swords, uniforms, etc. Value, exclusive of arms \$800.

COURSE OF STUDY.

The necessity for so adjusting various branches of a course of study that there shall be as little waste as possible in acquiring both information and discipline, is felt by every teacher. Such a course is not designed to be absolutely inflexible, but to guide the judgment into some definite line of progress from which no mere whim shall turn a student aside.

Each student is expected to take three studies besides one hour's practice in an industrial art; and variation from this rule can be made only with the consent of the Faculty.

Parallel Courses are offered to both sexes, with such differences as their necessities seem to call for. The following gives the general scope of the two, but fuller explanations are found in the Annual Catalogue:—

FIRST YEAR.

Fall Term: Arithmetic. English Analysis. Geometrical Drawing. Industrial.

Winter Term: Book-keeping. English Structure. United States History. Free-hand Drawing three times a week. Industrial.

Spring Term: Algebra. English Composition. Botany. Industrial (Carpentry or Sewing).

SECOND YEAR.

Fall Term: Algebra completed. Elementary Chemistry. Horticulture. Industrial.

Winter Term: Geometry. Agriculture or Household Economy. Organic Chemistry and Mineralogy. Twelve Lectures in Military Science. Industrial (Cooking).

Spring Term: Geometry completed. Projection Drawing. Entomology. Analytical Chemistry. Twenty Lectures in Military Science. Industrial (Farm and Garden or Dairy).

THIRD YEAR.

Fall Term: Trigonometry and Surveying. Anatomy and Physiology. General History. Industrial (Farm and Garden).

Winter Term: Mechanics. Agricultural Chemistry. Rhetoric. Industrial.

Spring Term: Civil Engineering or Hygiene. Physics. English Literature. Perspective Drawing two hours a week. Industrial.

FOURTH YEAR.

Fall Term: Agriculture or Literature. Physics and Meteorology. Psychology. Industrial.

Winter Term: Logic, Deductive and Inductive. Zoology and Veterinary Science. Structural Botany. Industrial.

Spring Term: Geology. United States Constitution. Political Economy. Industrial.

The daily routine requires chapel at 8:30 A. M., and classes from 8:50 A. M. to 1 P. M., as shown under "Class Hours." Class rhetorical exercises are held weekly. Military drill is twice a week. On every Friday afternoon, at 1:30, all attend the public lecture or rhetorical exercises in chapel.

Special Courses.—Persons of suitable age or advancement who desire to pursue such branches of study as are most directly related to agriculture or other industries may select such studies under the advice of the Faculty. Assaying and Pharmaceutical Chemistry may be provided for by special arrangement when students are qualified to pursue them.

Vocal Music.—All students are furnished instruction in vocal music free of charge, under direction of the Faculty. Classes meet on Mondays and Wednesdays for advanced pupils, and for beginners on Tuesdays and Thursdays, at 1:30 P. M. The advanced class shares in the music of public exercises during the Commencement week. This study is taken up at the choice of the student, but regular attendance is required as at other classes until excuse is granted.

Arrangements for special voice culture may be made with the Professor in charge, on reasonable terms.

Military Training.—During the second year, a course of thirty-two lectures is given. These are designed to show how an army is organized, equipped, and supplied, to explain some of the minor operations of war, to show the organization of the militia, and the militia law of this State. Instruction is afforded, to such as desire it, in other military subjects.

To those who desire it, an opportunity is given for practice in the ordinary infantry drill, including the school of the soldier, company, and battalion, and target practice. Although drill is thus made optional, students are not allowed to take it for periods shorter than one term. To obtain a proper proficiency, however, one should take the semi-weekly drill for at least a year.

MANHATTAN ADVERTISEMENTS.

R. ALLINGHAM, dealer in Fresh and Salt Meats. Special attention to student trade. Goods delivered free.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

E. B. PURCELL, Corner of Poyntz Avenue and Second Street, has the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered in all parts of the city and at the College, free of charge.

PICKETT'S NEW LIVERY STABLE.—Everything new and strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

BATH ROOMS.—At Manhattan Shaving Parlor, South Second Street. Hot and cold baths always ready. Everything first-class. Special care taken with ladies' and children's hair cutting. Razors bought and sold. Give me a call. PETE HOSTROP, Proprietor.

LESLIE H. SMITH, Boots and Shoes, 302 Poyntz Avenue, first door west of Stingley & Huntress. A full line of Rubber foot wear of the best quality at the lowest prices. Mens' all Solid Leather Dress Shoes, \$1.65. Ladies' Fine Dongola Button Shoes, \$2.00. Reliable goods at low prices.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds. Watches, Clocks, a magnificent line of Jewelry of the best makes. A big variety of Notions that students need. Musical Instruments, Strings, Sheet Music, Instruction Books. Our collection of Spectacles in gold, silver, and steel cannot be beat. Don't forget our ten-cent bargain counter. Everything at lowest living prices.—"75."